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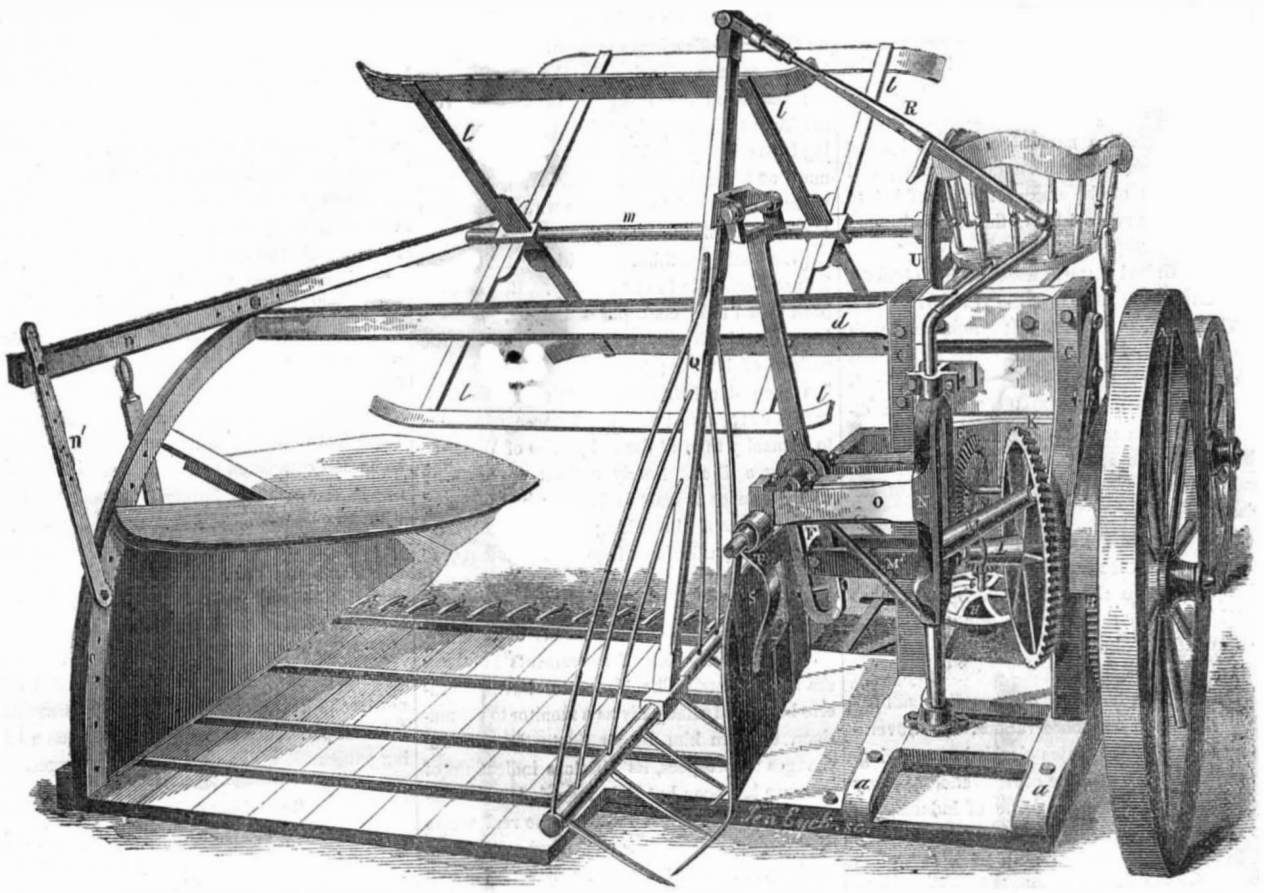
ATKINS' SELF-RAKING REAPER AND MOWER.



Self-Raking Reaper.

The annexed engraving is a perspective view of the Automaton, or Self-raking Reaper of Jearum Atkins, of Chicago, Ill., for which a patent was granted on the 21st of last December. This Self-raking Reaper is on exhibition at the Crystal Palace, in the gallery near the east end, in the Agricultural Implement Department. The inventor is a millwright by trade, and a very ingenious man. About three years ago, while residing in Will County, Ill., and when confined to his couch by a severe fall, an opportunity was given him to examine, from his bed, the first reaper brought into his neighborhood. A farmer who was present, knowing his inventive skill, said, if he could only attach a raker to it, he would make his fortune. This remark awakened his attention and excited his ambition. On his bed he planned and invented every part of his improvement before ever a single piece of his model was put together. For ingenuity, his raker does him great credit.

The rake, Q, in the engraving, is operated so as to draw the grain, when cut and laid on the platform, from the left to the right hand side, then take a half rotary turn, lift out the gathered wheat, and lay it on the ground, behind the machine, move over to the left hand side of the platform again, and perform the same operations.

Description of frame—*a a*, are two long wooden hounds, joined together at their forward ends, and attached by an iron bolt to a pair of front wheels, like those of a common wagon, to the tongue of which the horses are attached, for working the machine. To the under side of these hounds, the sills are secured, to support the platform, made of boards and sheeted with zinc, on the upper side of which the grain falls, and remains until a suitable quantity is collected for a bundle. C C are two posts, framed into *a a*; these posts are well braced, and support the machinery. *d* is a long iron bar, secured to the posts by iron straps; this cross bar extends over the whole platform, and is united to the brace *o*, which stands upon the platform, and is supported by another brace, the foot of which is framed into one of the sills. *n'* is a brace secured to *o*; it is adjustable at different height *n* is a bar in which the axis, *m*, of the reel works. *l l* are the arms of the reel. Owing to the bar, *n'*, being adjustable, the reel can be elevated or lowered, for grain of different heights.

Sickle Gearing.—The large wooden wheel, A, is secured on a strong axle, protruding from post, C; it supports one end of the machine. There is a small wheel, not seen, on the other end, under the platform. B is a spur wheel, bored and keyed on the hub of A, and turns with it by the forward motion of the machine. This wheel gears into a spur pinion on the shaft on which is the bevel wheel, E, which gears into the bevel pinion on the same shaft, *c*. On the lower end of this rod is a crank, which is united to the connecting rod of the sickle, and gives it a reciprocating motion. H is a small fly wheel on the shaft, *c*, for giving a steady motion to the crank.

Raking apparatus.—Behind the post C, opposite wheel, A, is a bevel wheel, K, on a stud pin, L; it receives motion by gearing into a bevel pinion, (not shown) on the shaft of B. In the same vertical plane with the center of the stud, L, and at a distance from wheel, K of one half its diameter, is a vibrating iron post, N, which turns in a foot step bearing, and is secured in a pillow block at the top; this post has a large slot through the center. Through this opening there passes a lever, M M', pivotted in the post, N, and attached at one end to wheel K, by a socket on its rim, into which the end of said lever is fitted, and turns freely as the wheel revolves. In the forked end, M', is a roller, F, which turns upon a pin, and rolls freely through the slot in the lower end of lever P. There are two short bars, O, framed to post. N, and connected at their outer ends. The lever, P, is suspended between these bars, on a short axis. To the top end of lever P, the rake, Q, is attached by an iron clasp, in which is a pin, on which it turns. The rod, R, connects the upper ends of the rake bar with the upper end of the arm of post N. To the cross bars of O is suspended, by hinges, a broad plate, S, furnished with long teeth on its lower edge, which extend down nearly to the bed of the machine. On the back of this plate is a small staple into which a link is inserted, and its upper end fastened by a pin screwed into the side of lever M'. The plate is prevented from turning loosely on its hinges by a spring, T, fastened to the bar, and pressing on the back of S, to keep the link spoken of tight. I is a spring united to the round upper part of post N, to steady the connection rod, R, as it approaches the lower point of its descent.

OPERATION.—The end, M, of the bent lever, which is inserted in a socket in wheel, K, moves in a true circle, and has a uniform velocity; this lever, from its fulcrum in post, N, to wheel, K, describes the surface of a cone, whose depth is equal to one half of its base, and whose apex is its pivot in N. Supposing the bed of the machine to be covered with cut grain, and the raking apparatus to be set in motion by turning wheel, K, while said wheel makes about one-sixth of a revolution, the action of the levers, P, and M', will have operated the rake, Q, and made it sweep from the left to the right side of the platform, collecting the grain in a compact bundle against plate, S. While this operation has been going on, the position of post, N, has sensibly changed, and as the wheel, K, continues to revolve, the lever, P, is carried through the upper part of its circumference, and the post, N, and its connecting arms are made to vibrate through a quarter of the circle. The rake, Q, is then swung off from the bed entirely, carrying off the grain, when by the continued motion of wheel, K, a reverse action to that described for gathering up the grain causes it to open out its full length behind the machine, and deposit the grain on the ground. As the lever, M, is carried through the lower circumference of wheel K, the post, N, is turned back a quarter of a circle, and the rake, Q, made to swing around over the bed of the machine into a position at the left of the platform for collecting a succeeding bundle of cut grain. These operations are continuous as the machine moves forward. For different fields of grain, light and heavy, the plate, S, is so arranged as to be pressed forward by the spring, T, to make the rake, Q, press a small as well as a large bundle. The velocity of the rake is greatest when sweeping across the platform to close the bundle of grain. The parts of this raking apparatus can easily be taken out, and the machine altered to mow grass as well as reap grain. This self-raking reaper is certainly a grand desideratum; we have seen a number of certificates from respectable parties, certifying to its good qualities, and it has been awarded premiums by the Ohio, Michigan, and Wisconsin Agricultural Societies. The cutting arrangement is similar to others in use. In the Crystal Palace we have noticed that it attracts the attention of our agricultural friends from the country more than any other reaper on exhibition.

The general construction of this machine—something which every farmer should carefully regard, independent of its nature and principle of operation—is good. The main driving wheel is large (4 feet diameter, and 4 inch felloe) and gives steadiness of movement in passing over rough ground, and a good support in the soft. The frame work is well braced and stiff, and properly banded with iron. The gearing is compact and well boxed in. The team is released of side draft, by the hounds, *a a*, resting upon a pair of front wheels, and these enable the machine to be turned with great ease. The economy of the raking apparatus, considering the parts to be well made and on a correct principle, is just as great for saving the expense of rakers, as cutting the grain by horse power, is in saving the expense of mowing by manual labor.

These machines are manufactured and sold by J. S. Wright, Prairie Farmer Warehouse, Chicago, Ill. The price for them is $160.

It was our intention to present, in this number, an abstract of the paper on Reaping Machines, which was read before the British Scientific Association, but it is delayed for want of room, until next week. Since our last number was issued, we have received a copy of the "Caledonian Mercury," published in Edinburgh, Scotland, which gives an account of another trial which took place near that city, between one of Mr. Bell's and one of McCormick's reapers—the latter superintended by McCormick in person. The grain operated upon was a heavy wheat crop. The praise is awarded by the Editor of the "Mercury," to the American Reaper, as having done its work with more ease, and as well as Bell's, besides having the advantage of greater simplicity. He makes use of nearly the same language we employed, last week, in speaking of the advantage of the sickle cutter over the scissor cutters of Bell's Machine. A great many farmers and engineers were on the ground, and he says, "the general opinion was in favor of McCormick's machine, for all practical purposes, not only on account of its simplicity, easy draught for horses, and non-liability to get out of order, but also for the really excellent style in which its work is accomplished."

This testimony to the American reaper by a countryman of Mr. Bell is candid and impartial.

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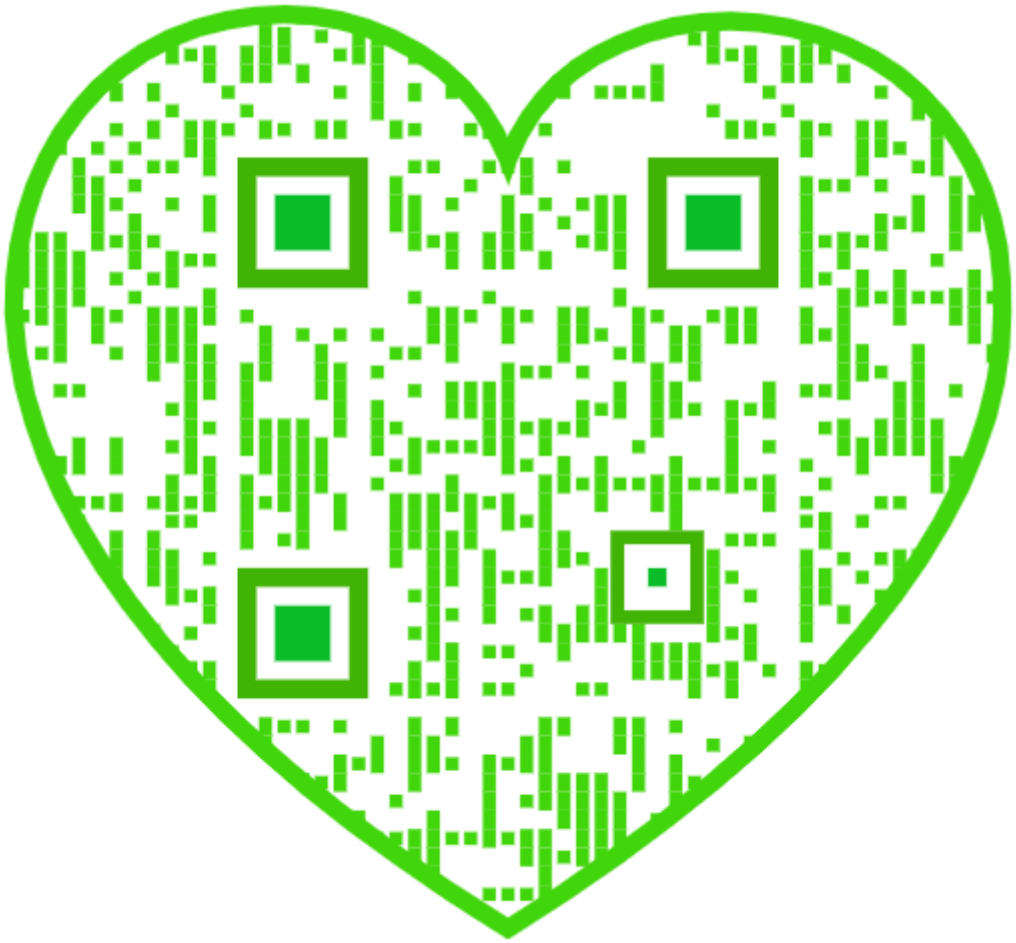

Scientific Congress---Improved Instruments Wanted.

On the 23rd of August last, a congress was held in the city of Brussels; it was a convention of scientific gentlemen who were appointed by different civilized nations, to confer together upon the best means of carrying out a universal system of sea and land meteorological observations. Lieut. Maury, appointed by the American Government, was requested to direct the proceedings of the Convention, but he declined the honor, and M. Quetelet, of Brussels, was elected President. The proceedings of this Convention were very interesting. Lieut. Maury explained the objects for which the different representatives met. He said, "the proposal which induced the American government to invite this meeting, originated with the English Government, in which the United States Government was invited to co-operate, in respect to land meteorological operations.

Nineteen stations have been formed by the English authorities upon a uniform system, and the directions of the observations confided to the immediate supervision of the officers in command of the respective stations.

In the United States, meteorological observations had been made since the year 1816.

The American Government sympathised with the proposal of the English Government, but said: Include the sea, and make the plan universal, and we will go for it. I was then directed to place myself in communication with the shipowners and commanders of the Navy and Mercantile Marine, in furtherance of the plan.

It is from the information extracted from more than a thousand logs that I have been able to prepare the charts which have been published up to this time, showing the sailing routes and the direction of the winds and currents.

With a view, however, of extending still farther these nautical observations, the Government of the United States decided upon bringing the subject under the consideration of every maritime nation, with the hope of inducing all to adopt a uniform model of log book.

In order to place the captains navigating under a foreign flag in a position to co-operate in this undertaking, Mr. Dobbin, Secretary of the Marine Department at Washington, has instructed me to make known that the mercantile marine of all friendly powers might, with respect to the charts of the winds and currents, be placed on the same footing as those of the American marine; that is to say, that every captain without distinction of flag, who will engage to keep his log during the voyage, upon a plan laid down, and afterwards communicate the same to the American Government, shall receive gratis, the 'Sailing Directions' and the charts published.

It has consequently been suggested to the captains that they should provide themselves with at least one good chronometer, one good sextant, two good compasses, one marine barometer, and three thermometers for air and water. I make use of the expression 'at least,' because the above is the smallest number of instruments with which a captain can fulfill the engagement he contracts upon receiving the charts.

The object of our meeting then, gentlemen, is to agree upon a uniform mode of making nautical and meteorological observations on board vessels of war. In order to regulate the distribution of charts, which the American Government offers gratuitously to captains, it would, in my opinion, be desirable, that in each country a person should be appointed by the Government, to collect and classify the abstract of the logs, of which I have spoken, through whom also the charts should be supplied to the parties desirous of obtaining them."

The President:

GENTLEMEN: I think I shall be anticipating the wishes of the members of this meeting, by proposing to them to pass, in the first place, a vote of thanks to Lieut. Maury, and to record our gratitude for the enlightened zeal and earnestness he has displayed in the important and useful work, which forms the subject of our deliberations."

All the members in turn intimated their entire concurrence in the proposal made by the President, to express to Lieut. Maury, their admiration and their gratitude for the eminent services which he has rendered, and is still endeavoring to render to the science of navigation. Thanks are, therefore unanimously voted to Mr. Maury.

Lieut. Maury:

GENTLEMEN.—I am extremely grateful for the sympathy you have expressed, and the praise you have been pleased to bestow on my humble efforts. On my part, I beg to thank you for the kind assistance that you have afforded me. Allow me to add, that we are taking part in a proceeding to which we should vainly seek for a parallel in history. Heretofore, when naval officers of different nations met in such numbers, it was to deliberate at the cannons' mouth upon the most efficacious means of destroying the human species. To-day, on the contrary, we see assembled the delegates of almost every maritime nation, for the noble purpose of serving humanity by seeking to render navigation more and more secure. I think, gentlemen, we may congratulate ourselves with pride upon the opening of this new era."

[We could not think of abridging the above; it is so honorable to our country. Belgium has been called the "cock pit of Europe," because its soil has been wet with the blood of all the nations of Europe; there the fate of empires has been decided. How much pleasanter is such a convention; how much more creditable to humanity than all the red glories of Waterloo or Quatre Bras. Surely nations are growing wiser; science at least is lending her powerful and generous aid in making them more brotherly. The imperfection of good instruments, to carry out the objects of the Congress, was a prominent subject of discussion.

The Report of the Representatives states:—

"The imperfection of instruments in use at sea is notorious. The barometer having hitherto been used principally as a monitor to the mariner, to warn him by its fluctuations of the changes in prospect, its absolute indication of pressure has been but little regarded; and makers seldom, if ever, determined the real errors of these instruments, or, if known, still more rarely ever furnish the corrections with the instruments themselves.

It was the opinion of the Conference that it would not be impossible, considering the spirit of invention and improvement that is now abroad in the world, to contrive a marine barometer which might be sold at a moderate price, that would fulfill all the conditions necessary to make it a good and reliable instrument; and a resolution was passed to that effect, in order to call the attention of the public to the importance of an invention which would furnish the navigator with a marine barometer that at all times, and in all weathers at sea, would afford the means of absolute and accurate determinations.

The Conference was of opinion that the mercurial barometer was the most proper instrument to be used at sea for meteorological purposes.

With regard to thermometers, the Conference does not hesitate to say that observations made with those instruments, the errors of which are not known, are of little value, and it is therefore recommended, as a matter well worth the attention of co-operators in this system of research, whether some plan may not be adopted in different countries, for supplying navigators, as well in merchant-men as men-of-war, with thermometers, the errors of which have been accurately determined.

For the purpose of meteorology, various adaptations of the thermometer have been recommended, such as those which refer to hygrometry and solar radiation; and for temperature by thermometers with dry, wet and colored bulbs. With these exceptions, the only instrument, in addition to those generally used at sea, for which the Conference has thought proper to recommend, is that for specific gravity.

The reasons for recommending the use at sea of the wet, the white and black bulb thermometers are obvious; but with regard to the thermometer with a bulb the color of sea-water, and the introduction on board ship of a regular series of observations upon the specific gravity of sea-water, it may be proper to remark that, as the whole system of ocean currents and of the circulation of sea-water depends in some degree upon the relative specific gravities of the water in various parts of the ocean, it was judged desirable to recommend that observations should be carefully made with regard to it, both at and below the surface."

Here is a field standing broad and wide, for improvements in navigation, and improvements in philosophical instruments.

Bridge Over the Mississippi.

The "Rock Island (Ill.) Advertiser" speaks thus of the new bridge which is to cross the Mississippi from Rock Island to Davenport, in Iowa:—

"The bridge that is to span the mighty Mississippi. to unite with its iron band the shores of Illinois and Iowa, at this point, is at last located, let out to contract, and to be finished by the first day of December, 1854.

The bridge is to commence in this city, immediately above the depot, at or near the place where the upper iron foundry now stands, and is to cross the "slough," or east branch of the river, on a curve up stream, by three spans or arches, each 150 feet in length, and will strike the Island above the old fort ground. The curve will be continued regularly across the Island to the banks of the main channel, which will be crossed by five straight spans each 250 feet long, and a draw for the passage of vessels. The length of the main bridge will be about 1,600 feet from the Island to the Iowa shore, and when completed will be a wonder of magnitude, strength and beauty. Indeed, together with the natural magnificent scenery of the country hereabouts—the old fort with its reminiscences—the Island itself abounding in romantic interests, and the busy, thriving and beautiful cities of Rock Island and Davenport on either side of the "Father of Waters," will form a combination of landscrpe so grand that it will not be the least of attractions to draw travelers from all points of the world to gaze upon a living panorama, which they may never forget.

Deep Ocean Sounding.

The United States Ocean Surveying brig, Dolphin, left the Chesapeake Bay on the 31st of last May, for the purpose of sounding the Atlantic Ocean to Scotland, and making a series meteorological observations. The last we heard of her was, that she had completed a perfect line of soundings across the Atlantic to "Rockule," and was lying in the harbor of Southampton.

The distances between each place of sounding averaged about 100 miles. A line was run to the Azores, to the North of which, about a parallel of 45 miles in a south-west direction, an elevation was discovered on the bottom of the ocean of about 6,000 feet, the soil indicating a fine yellow chalky substance, mixed with a small portion of the finest sand. After leaving the Azores, the Dolphin took a westerly direction, still succeeding in discovering the bottom. Steering north, she made a direct line to the "three chimneys," where, at the depth of 1900 fathoms, bottom was also discovered. At this point, Lieutenant Barroman, in charge of the ship, finding the position of the weather unfavorable to a continuation of their research, made sail, and came into Southampton. The greatest depth at which bottom was reached, was 3,130 fathoms, in lat. from 41 to 43, lon. 51 to 56.

The temperature of the water was also tested at various depths, specimens of which have also been preserved. During the whole of the observations, particular attention was paid to the width, depth, and force of the current in different parts of the ocean, all of which have been carefully noted, for the purpose of being fully discussed and explained.

A young nobleman, celebrated for his Herculean strength and rashness, has made a voyage from Venice to Trieste alone, standing on two planks four feet long, by one foot wide and four inches thick, fastened by an iron clasp, and without any other help than a pole. He arrived at Trieste, seventy miles from Venice, safe and sound, having gained his wager.

Dr. Ick, a meteorologist, has decided that there is no connection between the moon and the weather.

Compliment to Joseph E. Holmes.

Several of the exhibitors and attaches of the Machine Department, presented Mr. Holmes, the Superintendent of the Machine Department, with a splendid gold watch and chain, last week, in a very quiet way, as a token of their respect and appreciation of the able and considerate manner in which he has conducted the affairs of his Department in connection with the interest of exhibitors and those employed under his charge. This is a deserved tribute to one who has effected so much for the Exhibition by personal effort, experience, and skill.

Quality of Milk.

Dr. Prout has shown that all our principal alimentary matters may be reduced to three classes: the saccharine, the oleaginous, and the albuminous, represented by butter, sugar, and white of egg. Now, milk consists of all three —the curd, which is chiefly albumen; the butter, chiefly oil; and a portion of sugar. Milk is the only substance prepared by nature so completely perfect as to be a compound of these three principles, and therefore its perfection, mixed with bread, as a food for children.

Railroad Houses.

On the Chicago railroad, the laborers live in cars, which are fitted up for the purpose of boarding them. They have the necessary conveniences for cooking, eating, and sleeping. They carry the cows along, which graze alongside on the prairies, and they are put in stalls when the locomotive village moves forward to a new place. This plan has been found to work well.

Guano for Cotton.

J. M. Dantler, a cotton planter of South Carolina, states that in 1852, by way of an experiment, he applied 241 pounds of Peruvian Guano, mixed with sand, to an acre of cotton plants, and that the additional yield was over 100 per cent. on the amount expended for the guano. An acre without guano yielded 135 pounds of seed cotton, while an acre to which it was applied produced 518 pounds.

Treatment of Cholera.

A new mode of treating cholera is to give a table-spoonful of powdered mustard in a tumbler of cold water as an emetic. After it has produced vomiting, a wine glass of brandy, with ten grains of cayenne pepper (powdered capsicum) stirred up in it, is given. If the patient survives such a dose, he must be proof against any disease.

Prize Paper upon the Vine Disease.

The "Society of Encouragement," of France, offers a prize of 3,000 francs to the author of the best paper upon the disease of the vine; a prize of 3,000 francs for the discovery of the most efficacious preventive against it.

A new beverage is introduced into France, called the Creaming Hop Champagne, said to be equal to the finest kinds of this wine by those who sell it, but it is made from rhubarb, and is a deception. This wine will be sold for the genuine champaigne, here, next year.

The vines in Portugal have been attacked with disease; port wine will be scarce next year; but then there is plenty of logwood, elder-berries, whiskey, and burnt sugar, and it can with these be easily counterfeited.

The receipts for tickets of admission to the Mechanics' Exhibition at Boston, recently closed, were $19,000. The number of paying visitors at the halls was seventy-six thousand.

M. Arago, the eminent French savan, died in Paris on the 1st inst. He is well known in America as the author of an excellent cheap work on Astronomy, which was edited by Dr. Lardner.

The fumes of chlorine will clean alabaster, if they are only applied for a short time.

The number of admissions to the Crystal Palace on Saturday was twenty-three thousand three hundred and seventy-one.

The French Journals record the successful experiments of a chloroform ship. Bah!

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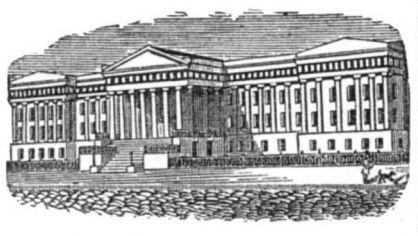

[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING OCTOBER 9, 1853.

PLOWS—By C. R. Brinckerhoff, of Batavia, N. Y.: I claim, first, combining with the plow beam between the plow and the clevis, two wheels, one on each side of the beam and of different diameters, the one resting in the furrow, and the other on the land, as described.

Second, I also claim making the tread of the furrow wheel narrow for the purposes described.

I also claim making the said wheels, especially the furrow wheel, adjustable in the direction of its axis, for the purpose of adapting its position to furrows of different widths.

I also claim making the furrow wheel bevelling outward on the side which presses against the land, as set forth.

I also claim making the small wheel adjustable vertically with reference to the shaft and the large wheel, as described.

HULLERS OF GRASS SEED—By H. P. Byram, of Louisville, Ky.: I claim, in combination with the rubbing or scouring wheel, the method of feeding up and holding against the said wheel, the seed to be cleaned by a pressure which is unvarying, whether the hopper be full or not, as described.

DETACHABLE LINING FOR THE FIRE BOXES OF STEAM BOILERS—By John B. Collan, of Reading, Pa.: I claim a detachable lining for the sides and ends of fire boxes of steam boilers, consisting of one or more tubes connected with the adjacent water space by means of hollow bolts, or their equivalent, as set forth, so as to admit of the ready removal and replacement of the tubes.

ASH PANS FOR LOCOMOTIVE ENGINES—By GilmanDavis, of Roxbury, Mass.: I claim taking in the air in front of the ash-pan, and introducing it into the fire-box in a direction opposite to the furnace doors, to protect the fireman from the back lash of the fire when said doors are opened, by means as described.

OPENING AND CLOSING GATES—By S. G. Dugdale, of Richmond, Ind.: I claim, first, opening, closing, fastening, and unfastening the gate, by moving the bottom of the gate in an oblique direction from and to the post, upon which it is hung, as specified.

Second, I also claim the use of the pendulous and vertical levers and arms, in combination with the hinges of the gate, as set forth.

COVERING IRON WITH GUTTA PERCHA—By Chas. Goodyear, of New Haven, Conn.: I claim the art or method of coating articles composed wholly or partly of metal, with compounds of caoutchouc or gutta percha, and subjecting the same to a high degree of artificial heat, or the process of vulcanization, as specified.

HILL SIDE PLOWS—By N. Harrison & J.W.H. Metcalf, of Ridgeville, Va.: We claim curving downward and inward the beam in the rear part, so as to cause it to support the rotary part of the plow, which it performs in combination with the standard, as set forth.

DRIVING CIRCULAR SAWS—By Joseph Harris, Jr., of Boston, Mass.: I do not claim driving pulleys by their surfaces coming in contact with each other, that method having before been used.

I claim, first, the method of hanging the arbor frame on journals, for its axis each side of the driving pulley bringing the axes of the arbor frame within the circumference of the driving pulley, or on a line passing through the driving pulley, in such a manner and at such an angle with a tangent to the driving pulley that the act of feeding the stuff to the saw or cutter, will press the arbor pulley against the driving pulley, as described.

Second, hanging the arbor frame on such an angle that the act of feeding the stuff to the cutter will press the arbor pulley against the driving pulley, in combination with a spiral spring, or its equivalent, for holding the arbor pulley firmly against the driving pulley, as described.

ATTACHMENT OF A HARROW TO A LAND ROLLER—By Daniel Hill, of Bartonia, Ind.: I claim the arrangement and mode of attaching the harrow to the forward axle of a roller, as set forth.

COB AND STALK CUTTERS—By T. B. Jones, of Carloville, Ala.: I claim the combination of the feeding trough, its gauge disc, the tube, and its gauge-ring, with the knives, whereby the same knife will, at the same time, cut fodder coarse and cobs fine, and thereby improve the quality of the product as feed for animals.

WINNOWERS OF GRAIN—By H. M. Keller, of Newark. Ohio: I claim the trap door in combination with the screen, arranged and operated as set forth.

STRAW CUTTERS—By J. J. Parker, of Marietta, Ohio: I claim operating both the reciprocating gate and the feeding rake by means of the compound spring pitman, substantially as herein set forth.

ROTARY ROOT-DIGGING CULTIVATORS—By Samuel Snow, of Fayetteville, N. Y., and Alexander Hime, of La Fayette, N. Y.: We claim the combination of the two toothed cylinders with the receiving box, all being arranged and suspended on an adjustable frame in the manner set forth.

SHAKING SHOES FOR WINNOWERS—Jacob L. Van Valkenburgh, of Ogdensburgh, N. Y., I do not claim the use of sieves in cleaning grain, but the communication of reciprocating rotating motion to the seive or separators, and also the construction of the machine in the manner set forth for separating grain from cockle &c.

TREATING METALS WHILE IN THE MOLTEN STATE—By Horace W. Woodruff, of Watertown, N. Y.: I claim treating metals while in the molten state, to expel impurities therefrom, by immersing therein some porous or cellular non-conducting substance or substances containing liquid matter substantially as specified.

VEGETABLE CUTTERS—D. H. Whittemore, of Chicopee Falls, Mass: I claim the combination of the long and short knives on the periphery of the cylinder with the hopper arranged and described as represented.

WASHING MACHINES—H. G. Robertson, of Greenville, Tenn.: I claim the employment of the double-chambered slatted bottom tub in combination with the vibrating or rocking frame constructed with two hinged slatted wash boards, which have cords passing under the bottom of them for holding the clothes against their bottoms while washing, the said boards being made movable or swinging, so that the clothes can be easily laid on the cords, and also being set in such a position that they and the clothes will always be caused to strike parallelly the slotted bottom and the hot suds in the tub, and force the latter through the pores of the clothes, and cause them to be washed clean, the whole being constructed and arranged and operated in the manner described.

This is a very novel arrangement, and is capable of operating well.

GRIDDLES—By Banford Gilbert, of Pittsburgh, Pa.: I claim constructing griddles of two pieces, separated by flanges furnished with openings to admit of the passage of cool air between the upper and lower pieces of the griddle, which openings may be closed at pleasure, as described.

OSCILLATING ENGINES—By A. B. Latta, of Cincinnati, Ohio: I claim the mode of arranging the valve chambers, outside of the barring or trunnion on which the cylinder oscillates, in such a manner as to allow the wrist pin of the eccentric rod to move equally across the center of the trunnion and moving equally above and below, and hereby giving motion to the valve or valves by said eccentric, independently of the oscillating of the cylinder.

I also claim the sliding bar or bars to which the eccentric is attached and passing up the whole length of the valve chambers to the end or ends, as the case may be, and attached to the valve rods, thereby giving motion to the valves.

I claim these arrangements or their mechanical equivalents.

LIFE BOATS—By Lelland Foreman of New York City: I claim constructing the body of my life-boat wholly of metallic tubes, brazed or similarly united throughout, thus affording a water-tight and solid metallic connection, and mutual bracing of every part. as shown, whereby are attained the objects explained in a compact and generally advantageous manner.

I further claim, in combination with such boat, the detachable tubular seat, as described.

VALVE MOTION OF OSCILLATING ENGINES—By Wm. Stephens, of Pittston, Pa.: I claim, first, the combined arrangement of the slide valve and the guide, which assists the oscillation of the engine in producing, and directs the motion of the said valve, as described, to wit, the valve being arranged to work transversely to the cylinder, and the guide being in the form of part of a helix or screw, concentric to the axis of the cylinder's oscillation, and receiving an arm or cross-head, attached directly to the rod or stem of the valve, whereby the intermediate mechanism usually employed is dispensed with.

Second, giving the valve the necessary or desired lead, by means of the adjustabie sliding lining pieces which line the sides of the guide, and are furnished with projecting or rising parts, which will give the necessary lead in working the engine in either direction, as set forth.

[A notice of this invention is published on page 372, Sci. Am.]

CUTTING BINDERS' BOARDS—By John A. Elder, of Westbrook, Maine, (assignor to John E. Coffin, of Portland, Me.): I claim, first, the arrangement of machinery for cutting pasteboard into strips, and those strips a given length at the same time.

Second, the arrangement of the rocker shaft, rolls, and shears, as described.

Third, I also claim the series of shears, or its equivalent, for the purpose described.

CULTIVATING PLOWS—By L. M. Whitman (assignor to S. G. Wise), of Weedsport, N.Y.: I claim the employment of the long inclined spring wings, secured at their front ends to the share and main standard, and turning upon the pin, in combination with the mechanical contrivances shown. for expanding and contracting the wings, or setting them more perpendicular and nearer together, for the purpose of throwing more pulverized soil against or up to the hills, or setting them less inclined to the horizontal plane. and further apart for the purpose of allowing the pulverized soil, weeds, &c., to pass over them into the board open spaces in the center, the said wings in either case cutting up the weeds and pulverizing the soil, as set forth.

[We should think this an excellent machine for cutting weeds.]

DESIGN.

METALLIC COFFINS—By T. J. Gillies, of Williamsburgh, N. Y.

CORRECTION.—COOKING RANGES—In our list of patents last week, a mistake inadvertently occurred in the claim of Geo. S. G. Spence, as sent to us. Before the words "I do not claim to so combine," there should have been inserted the following:

"I claim the arrangement of the openings, Y Y, and damper, Z, with respect to the arrangement of smoke flues above and below them, as specified, by which combined arrangement I am enabled, when desirable, by the direct draft, to cause the heat to pass under the back half of the bottom of the oven up alongside the entire back of the oven, and up the rear portion of the left side of the oven, and over the top of the oven into the chimney, instead of carrying it entirely around the oven, as set forth.

Also insert the word, "chamber," between the words "boiling" and "is," in the sentence "but the bottom plate of the boiling is also made to impart heat thereto," which occurs near the end of the claim as received and published by us.

Bonnell's Patent Flouring Process.

[As stated by us last week, we commence to publish the full specification of David P. Bonnell's patent process for manufacturing flour. The information contained in it is valuable to every person in our country—miller, farmer, chemist, &c. It will be completed in about three numbers.]

Before describing my improvement, I will briefly explain the process now practiced, which is as follows, to wit: the grain after being cleaned is passed between the surfaces of the mill stones, and by the friction imparted by them pulverized and sent to the cooler, or "first bolts," for the purpose of separating the flour from the "offal." In ordinary flouring mills it usually passes through two bolts, called "superfine" or first "merchant bolts." The flour produced by this bolting is generally divided by means of conveyors under them, into "superfine flour," and what is termed "returns." That part first produced at the head of the "bolts" is sent to the packing chest or barrel, for packing, the remainder produced, towards the "tail," is sent back or "returned" to the "cooler" or head of the superfine bolts, to be again re-bolted, with the view of mixing and sifting through with the "superfine flour."

The "residium" or "offal" then passes from the first bolts to the lower merchant or return bolts, which are generally covered in part or entirely with coarser cloth than is generally used on the "first bolts," for the purpose of sifting out the particles of flour which is found too coarse to pass through the meshes of the fine cloth on the first bolts. The flour from these bolts is also sent back or returned to the "cooler" or "first bolts," with a view to incorporate it with the superfine flour. The offal is again passed into succeeding bolts, and the flour produced is sent back or returned as above to the superfine or first bolts, and this process is continued until the offal reaches the bolts with suitable coarse cloth or wire adapted to them, for separating it into "middlings," "ship stuffs," "shorts," and "bran" or into 2, 3, or more qualities of "stuffs" as may be desired. If separated into two qualities, it is generally denominated "shorts" and bran, or "middlings" and bran. Since the introduction of what is well known as "Patent Dusters," the offals are submitted to the action of them, generally after having passed through all the ordinary bolts in the mill, when the work is regarded as perfected, with the exception of the middlings, which, it will be seen by their title, are not regarded as offal feeds or residium until after being re-ground, which is usually done at "slack times," or intervals between the regular flouring season, after which, the flour being bolted from them, they are denominated "finished middlings," "offal," or "feeds."

By this process of flouring, the quality of bolting cloth used on the various bolts, though often differing in quality, and the relative proportion of each, is usually about No. 9 or 10 for the superfine bolts; Nos. 6, 7, or 8 for the lower merchant or return bolts, and Nos. 3, 4, or 5 for middlings, with such other coarser quality as may be suited for separating the coarse eeds, as ship-stuffs, shorts, or feeds, &c.

Occasionally, with good machinery and perfect skill, the flouring process is regarded as finished without re-grinding the middlings, which is then separated with the ship-stuffs and shorts, and regarded as feeds. But in most cases that material which is bolted through Nos. 3, 4, and sometimes 5 cloth, being a coarse partially ground flour, is submitted to a second grinding after being carefully separated from the ship-stuffs, shorts, and bran.

The ship-stuffs were formerly used for navy or ship bread, but with the improved machinery now in use, it is regarded as useless for every purpose save feed for cattle, as used occasionally for distilling.

By this mode of flouring, and with the most improved machinery managed with the best skill, the barrel of superfine flour is seldom produced from less than 4 15-60 bushels wheat, and is rated to be, on an average, in first class mills, from 4⅛ to 4½ bushels to the barrel, and by a chemical analysis of various samples of wheat flour it appears to contain about from 10 to 12 per cent. of gluten, the amount of which is generally regarded as a good indication of the nutritive value of flour.

According to Davy's Agricultural Chemistry, English Middlesex wheat contained 19 per cent. of gluten, Silician wheat 23·90, Poland 20, and North American 22·50 per cent.—or about double the amount found in the American flour. It is also shown by chemical analysis of that part of wheat, which we term bran, that it contains much more of the nutritive property of the grain than is found in the superfine flour. Professor Johnston, showing the amount of gluten to be more than double, while by an analysis by Millen, there were shown to be, in 100 pounds of bran as follows, to wit:—

Starch, dextrine and sugar	53,00	
Sugar of liquorice . . .	1,00	
Gluten	14·90	18·50
Fatty matter	3·60	
Woody matter	9·70	
Salts	50·00	
Water	13·90	
Aromatic principles, &c. .	3·40	

This analysis was made with 100 pounds of bran from soft French wheat, which it is well known does not contain the amount of nutritive matter that is found in the harder varieties, yet it shows that over two-thirds of the whole amount is of a valuable nutritive material, susceptible of being made into flour, and more than one-half is the very material of which the superfine flour is composed, to wit, starch and gluten, and that the amount of the latter surpasses the average of that found in the best quality of superfine flour. Many experiments in the analysis of wheat, of flour and bran show the same general results, only varying in proportion according to circumstances, all proving conclusively that a large proportion of valuable nutritive matter, which is readily digestible, and which contains a large amount of the fat-forming matter as well as bone and muscle material, goes off with the bran and offal by imperfect manufacturing.

There seems to be considerable contrariety of opinion among chemists as to bran being a nutritive matter; analysis, however, clearly shows that what the miller puts into bag, and calls bran, is highly nutritive, the only question to be settled is whether what custom has designated as bran may not have associated with it a material that is not bran proper, and which contains the nutritive matter found in bran *as it is*. This might be decided by an analysis of 100 lbs., of the outer coating of wheat, or bran, taken off by Bentz's process, which, if done, it would undoubtedly show that it is not, of itself, very highly nutritious, as an indispensable article for the sustenance of human life.

(To be Continued.)

(For the Scientific American.]

Auriferous Discoveries in Maine.

As your paper is a repository of improvements and discoveries, I wish to contribute to its columns a few particulars in reference to the recent discovery of gold in this vicinity. The auriferous character of this region was first noticed, or at least made known, by returned Californian miners. One of these, Mr. Hankerson, with his party, have been digging and washing for the metal at Madrid, on Sandy River, in this county, for some time; but of the results of their labors we have not been authentically informed. I have seen about twenty-five small pieces of gold, and had an opportunity of testing some of it, which was washed from the sand of their locality by gentlemen visiting the place. Many who have visited their "diggings" think that the gold is not found in sufficient quantities for profitable working.

A few days since I visited, (in company with two friends,) a saw-mill in the south-western part of "Phillips," and washed out a small quantity of this metal. The pieces procured were small, only about the 55th of an inch across. When viewed with the microscope, their surfaces appear very uneven; numerous indentations peculiarly mark them, which are evidently the marks of the matrix in which they were consolidated. It was found in coarse gravel and sand which had been washed from the wheel-pit of the mill. The gravelly soil contains numerous quartz, and a considerable quantity of black ferruginous sand. The black sand is slightly magnetic. The gold must have been carried from its primitive position by water, and lodged in the diluvial deposits. The land is very uneven in the vicinity, rising into little eminences or mounds, and characterized by a profusion of eratic boulders. The soil is sterile, and in places strewed with fragments of quartz rocks.

We cannot judge, at present, to what extent the metal may be found; but it is very improbable that it can be obtained so as to compensate, reasonably, the miner for his labor. That it is found in minute grains at several places in this section, I cannot doubt.

The principal advantage which will arise from its discovery, I think, will be in the determining of the mineralogical character of the country.

STILLMAN MASTERMAN.

Weld, Me., Oct. 4, 1853.

Our Navy Steamers.

The U. S. Steamship Allegheny has returned from her trial trip disabled, and the engineer pronounces her unfit for service, not having been able to get more than four and a half knots per hour with the aid of sails. The engine frame, being of cast iron, was split by the expansion of the vessel, which is also of iron. The fissure spread open an inch wide, causing a general smash of the machinery.

Since the Princeton's return to New York a survey has been held on her machinery—engineers Copeland, Martin, and Shock held it.—They report that but slight alterations, which may be made in six weeks at the farthest, will be necessary to render her probably quite as good a vessel for the service required of her, as was originally expected by the Navy Department.

[The above we copy from our daily papers.—It fully confirms everything we have said about the disgraceful state of our naval steamers. A reform is certainly demanded in our Navy.

The "Argane," a tree, the fruit of which (after furnishing an abundant oil) is excellent food for cattle, is now introduced into France.

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New Inventions.

Improvement in Making Buckles.

Eli J. Manville, of Waterbury, Conn., has taken measures to secure a patent for making bows for buckles, to be used for suspenders and other purposes. The improvement is not in the buckles, but the machinery for constructing them, which is very ingenious, a complete idea of which could not well be given without engravings to represent the different parts. It has combined movable forming-dies, bending levers, and a fixed die provided with punches for forming apertures in the bows to receive the tongue points of the buckles. This improvement has been assigned to the New England Buckle Company.

Improved Fish Hook.

Henry Sigler, of Houston, Texas, has invented a new improvement in the sockdologer fish hook, for which he has taken measures to secure a patent. The improvement consists in making the top portions of the main hooks elastic, and so attaching them to a vertical guide piece, that they will serve as springs to force themselves together. A common hook is attached to the lower extremity of a regulating slide, some distance above the spring hooks.—The fish in passing to snap the bait, operate delicate toggle levers, which at once operate the spring hooks that strike into the body of the fish. This is an improvement on the Johnson sockdologer hook.

Self-Acting Oil Cup for Steam Engines.

An improvement in self-acting oil cups for steam engines has been made by David Clark, of Philadelphia, who has taken measures to secure a patent. The oil cup has an opening at its bottom in which a double conical stem valve works, which is operated by the steam, to allow a certain quantity of oil to be fed in at regular intervals, by the letting on and shutting off the steam. The steam forces up the valve to close the opening of the oil cup, and when it is shut off, the valve falls by its own gravity; during the time of its descent, the oil for lubrication passes down until the valve rests on its conical seat in the inside of the cup. This cup is for valve chests and steam cylinders.

Improvement in Screw Presses.

An improvement for reducing the friction in screw presses has been made by Duncan E. McMillan, of Jackson, Tenn., who has taken measures to secure a patent for the same. The nature of the improvement consists in the employment, between the end of the screw and the follower, of a series of rollers, furnished with flanges, working in such a manner betwixt the edges of a revolving ring and the tramways between which the rollers run, so as to keep the rollers in place and prevent thrust in the bearings of their journals, thereby saving much wear and consequent expense.

New Self-Acting Press.

Measures have been taken to secure a patent for a self-acting press, by S. R. Holt, of Worthington, Ohio. The nature of the invention consists in constructing the press in such a manner that the weight of the article to be pressed, and also that of a certain portion of the press, are rendered available as the motive power for facilitating operations and increasing the action of the press, whereby the pressing operation is performed gradually in a very efficient manner, and with an economy of labor.

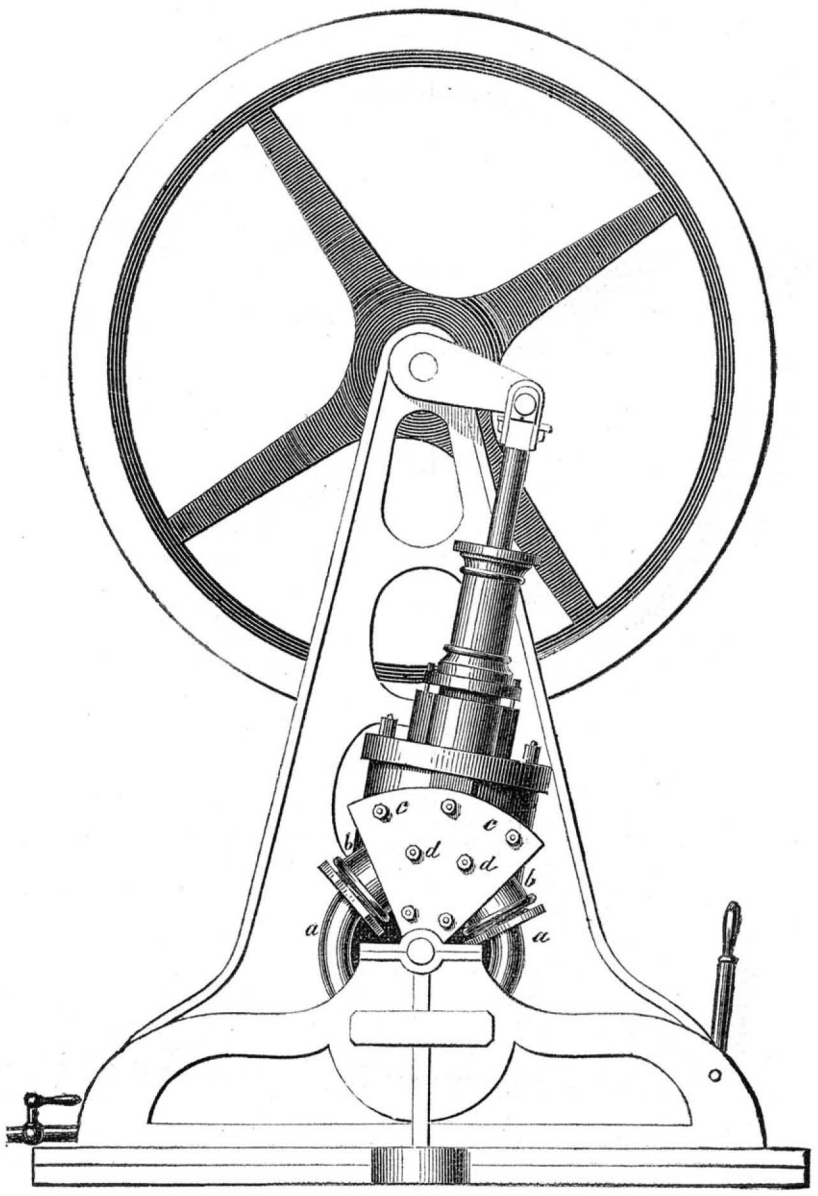
Propelling Vessels in Water.

William Lindon, of Brooklyn, N. Y., has taken measures to secure a patent for improvements in vessels propelled by paddle wheels.—The plan is to form the sides of paddle wheel steamers in such a manner that the paddles will revolve in such close contact with the vessel as to prevent the escape of water from the floats at the sides.

Railroad Car Trucks.

D. A. Hopkins, of Elmira, N. Y., has taken measures to secure a patent for an improvement in car trucks. The object of the improvement is to prevent the truck being thrown off the rails when passing over any obstruction; the truck is also kept firmly on the track in the case of an axle breaking, or the loss of one or two wheels. By the use of guides above the wheels, the truck is prevented from being canted over, when the wheel or wheels are lifted above the rail or rails by an obstruction; the truck, through the attached guides, is made to connect with the car bed, the weight of which is sufficient to prevent the truck being twisted from the track

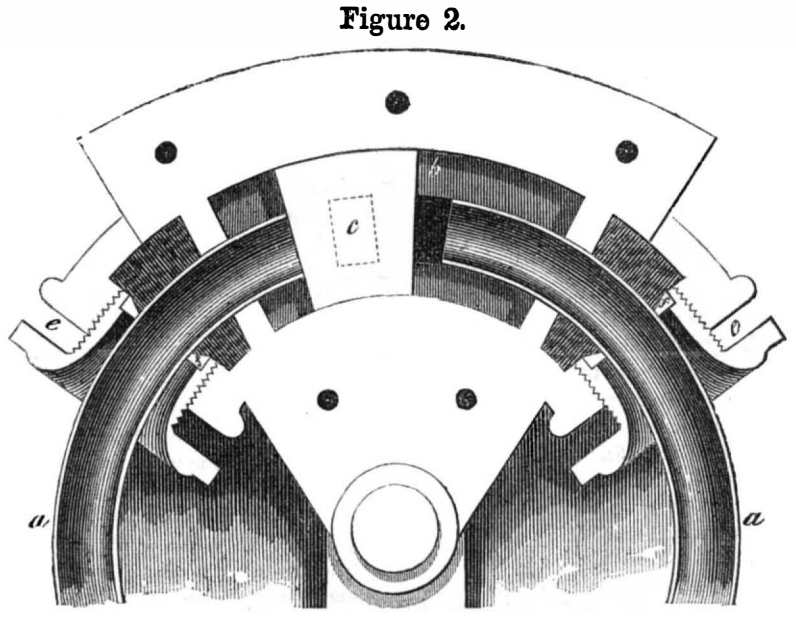
IMPROVEMENT IN OSCILLALING ENGINES.---Fig. 1.



The annexed engravings are views of an improvement in Oscillating Steam Engines, for which a patent was granted to Morris J. Gardner, of York, Pa., on the 3rd of last August. Figure 1 is a front external view of the improvements; figure 2 is an internal view of the improvement, showing the circular steam tubes by which the steam is introduced into the steam chest, and from thence into the cylinder; also a view of the dissected half of the larger tubes, (constituting at the same time packing boxes) which pass over the steam tubes as the cylinder oscillates, and also a view of the packing by which it is secured from leakage.

a a are the steam tubes; the one on the right hand is the induction, that on the left the eduction tube; *c*, seen in dotted lines, figure 2, is a valve connected with the eduction tube, which, as the cylinder oscillates, alternately opens and closes the steam ports, for the admission of steam into the cylinder, and for the escape of exhausted steam through the eduction tube.—

Figure 2.



The steam chest is circular, and so are the steam tubes; these tubes are stationary on the frame of the engine; *b b* are larger circular tubes attached to the steam chest; they inclose the tubes, *a a*, and are of sufficient size to admit of the necessary packing, and also to glide over and around the steam tubes; *c c* is the external plate covering the steam chest, and is firmly secured by screws or bolts passing through the steam chest into the body of the cylinder. In the middle of this external plate are two set screws, *d d*, for the purpose of adjusting a steel plate at the back of the valve in the steam chest to keep the valve tight on the steam ports when the motion is reversed. The hollow tubular screw seen in figure 2 is made to screw into the packing boxes attached to the steam chest; at the inner end of each screw is a projection. There is a self-adjusting ring in the hollow projection of each screw, it is a little smaller than the hollow projection, so that it may readily adjust itself to the packing tubes. It is bevelled on the inside to press the packing against the tubes. The manner in which the screw is inserted in the packing boxes is seen at *e e*, and the manner in which the adjusting ring compresses the packing and presses it against the tubes, is seen at *f f*, figure 2. One of these screws is inserted at each end of the circular steam chest and packing boxes.—To reverse the motion of the engine, all that is necessary will be to have an ordinary steam chest communicating with the circular steam tubes, and with a slide valve so as to make the eduction the induction tube, and vice versa, and thus change the direction of the steam from the one to the other. The advantage claimed for this improvement is to have the oscillating bearings operate in packing and not in metal surfaces, so as to obviate friction.

The claim is for "the circular steam tubes, the circular steam chest and packing boxes operating as described."

Oscillating steam engines are far more extensively used now than they were a few years ago; their employment, we believe, is also fast extending; any improvement, therefore, in such engines is valuable to the community.

More information may be obtained by letter addressed to Mr. Gardner.

Adulteration of Oil.

Dr. Nichols, of Haverhill, Mass., in a communication to the "Boston Journal," states that being employed by a manufacturer of woolen goods to examine chemically, some specimens of lard oil purchased for manufacturing purposes, he ascertained that it was largely adulterated with *rosin* oil. One specimen contained about twenty per cent. of the *rosin*, which being one-fourth less in price, was certainly a great cheat. Rosin oils are not adapted for woolen goods, consequently the adulteration was positively injurious:—

"When lard or whale oil is adulterated with rosin oil, and used for purposes of illumination, it will result in throwing off large quantities of unconsumed carbon, which falling upon furniture and upon walls of dwellings produce serious mischief. The presence of rosin oil in any of the fatty oils may be detected by the peculiar odor, by the dense black smoke arising from a shred of wicking when ignited in a capsule of the mixture, and by its specific gravity."

He also says that he was employed to examine what is termed "Marsh's Vegetable Oil," which is used for illumination. This he found to contain none of the characteristics of oil:—

"It is a hydro-carbon liquid, composed of alcohol and turpentine—four parts of the former to one of the latter—tinged yellow with some coloring matter. It is a compound eminently explosive and dangerous in its character, like other burning fluids, differing from them only in name. A few drops evaporated in a glass flask, and the vapor mingled with 25 parts of atmospheric air, exploded with a loud report. An ordinary decanting vessel filled with its vapor and air, exploded with a fearful detonation. The specimen experimented with was procured of the manufacturer direct."

This article is extensively advertised and recommended as a safe anti-explosive oil, and thousands are burning it carelessly, thinking it to be such.

Lace Bark Tree.

In the West Indies is found a tree, the inner bark of which resembles lace or net-work. This bark is very beautiful, consisting of layers which may be pulled out into a fine white web, three or four feet wide. It is sometimes used for ladies' dresses.

The Manchester (N. H.) Print Works, which were burned down three weeks ago, took fire in the drying room, which was kept at 200° Fah. When first discovered a head of steam from the boiler, at 80 lbs. pressure, was let on, but it failed to extinguish the flame. The loss was estimated at $150,000, and 400 hands were thrown out of employment.

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Scientific American.

NEW YORK, OCTOBER 23, 1853.

Revolution in Vulcanized Fabrics.

Who has not heard of the "Great India Rubber Case,"—its interminable and apparently unexterminable character. There is a prospect, however, of its annihilation—not by law, that is impossible, but by an opponent in the form of a new discovery, whereby gutta percha is rendered flexible and capable of enduring as great a heat as vulcanized india rubber, adapted to all the same purposes, and made into similar articles. In the Machine Room of the Crystal Palace, various articles of the vulcanized gutta percha are exhibited—such as coats, car springs, packing, &c. They have the appearance of prepared india rubber goods, are said to be more tenacious, not so liable to decompose, and fifty per cent. cheaper. There is a case of Goodyear's prepared india rubber goods, beside those of the gutta percha, and for variety and extent of application far exceed the latter: thus there are india rubber canes, knife handles, coats, shoes, balls, fancy ornaments, and a hundred other things. The manufacturers of gutta percha say they can make similar articles, but have not had time to manufacture such a variety yet. An account of this new discovery will no doubt be interesting to all our readers. The inventor is John Rider of this city; he secured a patent for the process on the first of June last year.

Gutta percha, is a gummy substance discovered only seven years ago in the East Indies, and the first description of it published in our country, appeared in the columns of the "Scientific American." It is obtained from the juice of a tree, and comes here combined with many woody impurities, two rough lumps of which are shown in the Crystal Palace. Its qualities, as known heretofore, were its sensitiveness to heat at 80° or 100° Fah., whereby it was rendered plastic, and could be moulded into any form, and again become hard as a bone at 60° Fah. Mr. Rider's process consists in so treating it that it can still be moulded into any form, spread upon goods to make them water-proof, made elastic, and finally rendered capable of standing a heat of over 300° Fah., without becoming soft.

The process is as follows:—all the solid woody fibre is first removed from the gutta percha, and then it is submitted to heat in a proper vessel to about 400° Fah., for from two to four hours, until all the volatile matters are expelled. When so heated it is in the state of a thin dough. The gutta percha, however, may have this heat applied to it either by hot rollers, hot air, or steam, and it is the expulsion of these volatile matters from it, which forms the basis of the new discovery. To every eight pounds of gutta percha so prepared, three pounds of the hyposulphate of lead or zinc are added and mixed thoroughly by passing them through a series of heated metallic rolls like those for mixing sulphur and caoutchouc, only for gutta percha the rolls need not be so hot by 30° Fah. To make heavier goods, about 4 lbs. of Paris white and one pound of manganese oxyde may be added to the mixture. When thoroughly incorporated, the compound is to be spread upon cloth into sheets, or moulded into any shape, but it is still liable to be affected by solvents and changes of climate, equally as much as native gutta percha. To render it permanently elastic at all temperatures, the goods are submitted to the curing operation. This operation is analogous to that of curing india rubber goods, with some exceptions. The articles are placed in a room or vessel as nearly air-tight as possible, and are then subjected to a heat of 280° or 320° Fah. This is a higher heat than that used for curing india rubber; the time required for curing varies from two to ten hours, according to the massiveness of the articles—the thicker requires the longer time. Articles liable to come in contact with one another during the curing process, should be dusted over with flour or some non-adhering substance. After the curing operation is completed, the goods are withdrawn, washed clean with water, dried, and are then ready for use. If required to be entirely freed from odor, instead of being merely washed with water, they must be boiled in a solution of potash, then well washed in water and dried in the sun. The hyposulphates herein mentioned, as mixed with the gutta percha, are sometimes advantageously employed in combination with metallic sulphurets for metallic thyanizing the gutta percha. In such cases, preference is given to artificial sulphurets resulting from precipitation, on account of the fineness of the precipitates—they mix better in such a state of subdivision.

The preliminary preparation of gutta percha described, for the after processes, would destroy india rubber. As the gutta percha softens before vulcanization at a lower temperature than india rubber, it is more favorable for mixing with the other ingredients, as it does not adhere so readily to the mixing heated rollers. As it requires a higher heat than india rubber in the curing process, so as to render a complete union of vulcanizing materials with it; the goods so made are said to withstand a far higher heat than those of vulcanized india rubber.

That the discovery is a valuable one, no one can doubt who views the goods made by it. If vulcanized gutta percha goods can be made, at one half the price of those made from india rubber, and equally as good, a great benefit has been conferred upon our country by this invention.

Making Hat Bodies—Important Patent Case.

U. S. Circuit Court, New York, before Judge Nelson.—On the 12 inst., Judge Nelson granted an injunction against J. and J. H. Prentiss, W. H. Ames, H. Moulton, and L. E. Hopkins, on the complaint of Burr & Taylor, assignees, for infringing the patent of H. A. Wells, for making hat bodies. The opinion delivered by Judge Nelson went over the whole ground of the invention and the controversy in the case.

On the 25th April, 1846, H. A. Wells took out a patent for an improvement in machinery for manufacturing hat bodies, which consisted in feeding the fur after it is picked to a rotating brush between two endless belts of cloth, one above the other, the lower horizontal, the other inclined, so as to compress the fur, and enable the brush the better to take hold of it, and which, moving with great velocity, throws it into a chamber, or tunnel, which is gradually changed in form toward the outlet at the other end, for the purpose of concentrating the flying fur and directing it on to a cone, which is placed just in front of the delivery aperture of the chamber to receive the fur. The cone is perforated, or made of wires, and the air beneath exhausted by a contrivance fitted to form a partial vacuum. There is also an opening in the chamber to let in the air, which, with that produced by the action of the revolving brush, more readily directs the floating fibres of the fur in the chamber to the exhausted cone, in connection with the draft produced through the wires by the exhaustion of the air below. There is also a contrivance at the end of the chamber or tunnel, where the fur is discharged on the cone, to regulate and adjust the thickness of the bat, corresponding to the parts requiring more or less in the formation of the hat-body.

After the bat is thus formed on the cone, it is removed, a somewhat delicate operation, as the fibres have not sufficient adhesion until subjected to a hardening process; therefore the bat is covered with moist felted cloth before being removed, over which is placed a perforated metallic cone to produce pressure upon the fibres of the hat, and at the same time admit of the circulation of warm water, in which it is immersed, to harden the hat preparatory to the felting; also another metallic cone is placed within the one on which the bat is formed, as that is thin, so as to enable the whole to resist the pressure of the surrounding water in the process of immersion.

The patentee claims, among other things: 1. The chambers into which the fibres of the fur are thrown by the brush, in combination with the perforated cone, placed in front of the aperture of delivery for the purpose and in the manner substantially as described, the said chamber being provided with an aperture below and back of the brush, for the admission of a current of air, to aid in throwing and directing the fibres on to the cone as described. And 2. In the process the patentee claims hardening the bat while on the perforated cone, and preparatory to its removal therefrom by immersing it in hot water as described.

The defendants denied the originality of Wells' invention, saying that the same thing was invented by Thomas Williams, who took out patents in England in 1833 and 1837.—Evidence was adduced, however, to prove that Wells invented his in 1833. It was also shown in defence, that Thomas Blanchard, the ingenious innventor of the machine for turning gun stocks, invented the plan for making woolen and fur batting by using the vacuum process; he deserves the credit of this, but Willis adapted it to form hat bodies, and invented the hardening process. The defendants did not harden felts by hot water, but by jets of steam, and considered that their process was different, but Judge Nelson decided that it was analogous, and every point set up by the defence he considered untenable. This patent of Wells was tried at Common Law in May 1850, and the jury decided in its favor, and a perpetual injunction was then granted for that District. All the parties in this case are men of capital; the patent is a valuable one, and the assignees, we learn, are coining money at a rapid rate.—How much they paid for the patent, or how much they may be *paying* for it, we do not know; we hope they are more generous than the assignees of Chaffee's india rubber patent were; let the children of genius as well as the men of good business qualities have their reward.

Tanning Patents---Kennedy's Process.

The tanning interests of our country being so extensive, every patent issued for shortening the process of making leather, as a consequence, attracts a great deal of attention, and elicits a number of enquiries from our readers. The ablest articles on tanning ever published in our country, appeared in Vol. 5, "Scientific American;" they were furnished by one of the most—if not the most—experienced leather manufacturers in the United States, and who with his practical experience, combines great ability and a fine education. We have also published the specifications of "Hibbard's Process," and that of "Eaton," both of which have caused some excitement among our tanners. Having had a number of enquiries made about the process of David Kennedy, of Reading, Pa., which was patented Nov. 16th, 1852, we present the following abstract of it; nothing being left out that is of the least consequence:—

The process consists in using a mixture of catechu, &c., with nitrate of potassa, or other like nitrates, alum, and borax, along with water, to form a tanning liquor. The following mixture answers very well: 12 lbs. of terra japonica, dissolved in 4 gallons of hot water; 1 lb. of nitre dissolved in one quart of water; ½ lb. of alum dissolved in one quart of water, and ½ lb. of borax dissolved in a like quantity of water. In such proportions, these ingredients may be stored up in casks for use; these mixed together form the tanning liquor for skins and hides, which is to be used like any other tanning liquor, and the skins worked in any known way. Some of these materials may be replaced by others of strong tanning properties.

The claim is simply for the use of the *borax* in combination with the alum, nitre, and solutions of tanning. The property claimed for the borax is that of what is called *raising* the hides without injury for safe tanning. Borax has indeed peculiar qualities, but as it is a salt with the alkali preponderating, its quality in a tanning liquor, we should suppose, was negative and not positive to the action of the tanning ingredient.

Tunnel Railways in Cities.

There has just been issued a prospectus of a new subterranean railway through London, to be carried on beneath the streets. The first portion of this railway is to be commenced at the south end of Westbourne Terrace, for the great Western Railway Terminus, and will proceed under the New Road to Battle Bridge, where it will join another branch, and eventually, it is said, should the undertaking prove remunerative, all the principal thoroughfares will be tunneled for this new species of traffic. The company commence with a capital of £1,500,000 in 15,000 shares of £100 each. The bill for making the railway has passed both Houses of Parliament; a part of the capital is subscribed, and operations will shortly commence.

Such a tunnel railway was proposed some years ago for Broadway, but there does not seem to be any prospect, at present, of it ever being constructed. We call uncle John Bull "a slow fellow," sometimes, but in many things he takes the lead of the world, and leaves others to follow, after long intervals, in his footsteps. This was the case with regular Ocean steam navigation. At present he occupies the advanced and only posts in submarine telegraphs, and iron tubular bridges; and now he has advanced his picquets into subterranean street railways.

Badly Constructed Clipper Ships.

It seems that great complaints have come to the Board of Underwriters in this city, from San Francisco, of the great damage done to cargoes which have been carried in some of our clipper ships. The agent of the Board in San Francisco in his complaint says:—

"A great deal of water is shipped in bad weather, particularly by the clippers, and they are not sufficiently provided with scuppers and ports in bulwarks to carry it off. The companion ways and scuttles are not sufficiently protected to prevent the water entering and passing into between decks.

Side ports and lights between decks are the cause of much damage, and are very dangerous. There should be several more scuppers in the between-decks, and cargoes should be dunnaged up one and a half to two inches, with strips laid crosswise, leaving a chance for the water to run off. Ships, generally speaking, are not properly dunnaged in the lower hold—frequently coal is put in the bottom for dunnage, in which case it should be covered with joist or plank, to prevent iron, machinery, or other heavy goods stowed thereon, working down into it, which, being wet with bilge water by absorption, must needs damage a great portion of the ground tier.

The bowsprits are not sufficiently secured, and most ships leak forward around the belts and masts. Great loss has been sustained by stowing grain in bags and packets between the beams and keels; it frequently gets damp or wet, heats and runs down, damaging ten times as much cargo by its heat and putrid smell as the grain itself is worth.

The iron-work of clippers has not been strong enough—many spars have been carried away by this defect.

There is lack of strength in many ships; the timber is not properly seasoned, being built in haste and badly caulked in cold weather. If clipper ships cannot carry their cargoes dry when new, what can be expected after a few voyages?"

[We publish this list of complaints, in order that our shipbuilders may take warning in time, before they lose their character, and in order that the attention of our underwriters may be more sensibly directed to the proper stowage of cargoes. Two weeks ago, a ship came into Boston from Liverpool with 70 casks of the hypochlorite of lime—bleaching powder—which was so badly stowed away, that it damaged nearly $1,000 of goods. It is not enough that commanders of vessels should be able to navigate them, they should be intelligent in respect to the nature of cargoes, so as to stow them properly to prevent one kind of cargo doing damage to another. We have seen a statement in the English papers respecting the American built clipper ship "Challenge," which has made such excellent passages from China to Liverpool, to the effect that although nearly new, she is so racked as to be in reality not half as good as the Aberdeen built clippers that have made as many voyages. American shipbuilders, this should not be; we know you can build clippers as celebrated for strength as speed, and we are well aware of the contract system of building just according to the price stipulated; but what we want you to do, is to unite, if possible, and agree not to build poor ships at any price. Do not let us lose our national character for building *good*, as well as fast clippers.

Imponderable Agents.

Article No. 4 has been crowded out this week for want of space, on Imponderable Agents, on our going to press, this week.

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Cotton Thread—American and Foreign.—There are three cases of American spool cotton on Exhibition; two are from Fall River, Mass., manufactured by N. Buffington; the other case is from Willimantic, Conn., Taft & Bartlett, manufacturers. The cases from Fall River show very neat samples, especially the colored thread; they indeed do credit to the company in respect to neatness and taste in spooling and coloring; the thread from Willimantic is poorly spooled; the bobbins are rough and anything but neat, and the colors are very poor. This company has a wide field for improvemement. The spool cotton thread which maintains the highest character in America, is that of Messrs. Coats, of Paisley Scotland, and the next to it is that of J. Clark & Co., Mile End, Glasgow. One of the Messrs. Coats lives in this country, looks after the business, and sees that the labels are not forged. By this manner of managing the business, and keeping good thread, its character has never suffered from spurious imitations. We expected to see some of their thread on exhibition, but looked in vain for a single spool; this, in our opinion, exhibits a want of proper sagacity on the part of the resident partner. As Britain supplies us with nearly all our cotton spool thread, of course, the only samples are to be found in the British Department, and one case displayed by a new thread company, is the best we ever looked upon; it is that of Godfrey Ermen, of Manchester; it is named "Patent Diamond Twist." The finish of it is beautiful, it more resembles linen than cotton, and is said to be as strong. J. Clark, & Co., of Mile End, Exhibit three cases of excellent thread, one of white thread spools, one of black thread, and another of assorted colors. There is one case of excellent white spool cotton from Blackhall, & Co., Paisley; three cases of three cord from Jonas Ralph, Eng., (don't know what town;) two cases from Francis Hord, of Manchester; one two cord and one six cord, white and colored; one case from Wm. Danbarn, of Liverpool, containing all kinds; we suppose he is dealer, as he exposes the Wisebeck German thread, and Scotch Paisley; his samples are good. Jonas Brook & Bro., of Waltham Mills, England, exhibit some beautiful thread on spools and in skeins, and what is of more interest to us, samples are shown in all the different stages of its manufacture from the raw cotton to the first sliver and finishing twist. The rovings exhibited are beautiful; we wish that some of our manufacturers could show the like. The only other case exhibited is from J. P. Clark, of Leicester, England; it is the neatest put up thread in the Exhibition; the ends of some of the spools are of mother of pearl, and exhibit a taste equal to that for which the French are distinguished in such matters.

The manufacture of cotton thread is a very important one; we do not know how much our country pays every year to Britain for it; but the sum must be very large. The machinery for manufacturing cotton thread is very fine. There is but one factory in our country that attempts to make fine numbers, and that one is at Pawtucket, R. I. It is said that the humid climate of Britain favors the spinning of fine cotton, and that ours is unfavorable. This is not correct, an artificial humid atmosphere can be created in any of our factories with steam.—More American thread was made ten years ago than there is to day. Our first manufacturers were well patronized, but they exhibited a want of judgment; they looked more to quantity than quality, so as to sell cheap; by this course they sold their character, and it will be hard for our thread makers to retrieve that loss, however good their thread may be; perseverance, however, will reach the mark, and the Company at Fall River, if we can judge, are on the highway to complete success, and the establishment of the American character for good spool cotton.

Cocoa Nut Fabrics.—In the English Department, in the gallery, there are some specimens of a new manufacture, as mats and such like articles, to which we wish to direct the attention of our countrymen. They are made from the interior of the husks of cocoa nuts, and exhibited by a Mr. Wilder, of London. Samples of the manufacture are exhibited in every stage of the process from the husk to the manufactured article. Such articles could easily be manufactured by some of our people.

American Brocateles.—There is one case of goods in the American Department which excites no small amount of pleasurable emotion in us, as they should in the bosom of every American; we allude to the American Brocateles manufactured at Seymour, Conn. There are richer brocateles, we believe, in the French Department, and those from Manchester in the English Department, we think have no equals for beauty and quality in the Exhibition, but singly and alone, the American brocateles are the only ones in the world which have been and are manufactured by the power loom. The improvements in the power looms, to adapt them to the weaving of such fabrics, we understand, are a secret, and intended to be kept so. The company, we have been informed, have expended $30,000 on machinery, and so far have been successful both in the making of the goods and in the profits of the manufacture. Success to the enterprize; the goods are very wide, and in this respect differ much from the narrow fabrics of a like character from the continent of Europe.

ORNAMENTAL TABLE.

Our illustration of some of the works of art, this week is an Ornamental Table in the French Department. The contour is pleasing, and the skill displayed, exhibits rare ability in such manufacture. Our artists may learn much from a close examination of such articles.

Quick Shooting—Fire Arms.—In one court of the American Department, there are five kinds of swift shooting weapons of death, namely, three revolving fire-arms, and two of the breech-loading kind. The two breech-loading rifles are those of Sharp and Marston, both patented; they have been illustrated in our columns, and the respective nature of each described. Sharp's has a sliding vertical butt behind the charge chamber, Marston's has a sliding horizontal piston. The samples exhibited are well made and tastefully mounted.

The three revolvers are Colt's, Whitney's, and Porter's rifle. The first has a world wide fame, it is the oldest revolver in our country, and the first ever made to revolve the charge chamber by the action of the trigger. Whitney's pistol was illustrated and described in Vol. 8, Scientific American; it is a simple and good instrument. Porter's rifle has received many high testimonials respecting its qualities, but we have never seen it tested, the others we have. For quick shooting fire arms, and for good rifles, America occupies the foremost place in the world.

Dunn's Electric Steam Boiler Alarm.—Mr. Avery, we believe, well known as an electrical engineer, exhibits the steam boiler alarm of Arthur Dunn, of England, which has been patented in this country, It is well worthy of the attention of all engineers, and as it is exhibited in a working model, which is shown in section, also in drawings, any one who has even a limited acquaintanceship with electricity, will be able to get an understanding of it in a very few minutes. It operates by a column of mercury in a tube in the boiler, which, when the pressure is at a fixed standard, or below it, and the water at the proper level will not be in contact with the wire of an electric battery, but when the heat increases, either by an increase of the pressure of the steam, or the water getting low, the mercury in the tube will expand and close the circuit, which brings an electric magnet into operation, and rings a bell, which may be placed in the engine room or captain's office. By a key, the fireman can also telegraph at any moment with the engineer.

Belgian Circular Knitting Machine.—A most ingenious machine for knitting every kind of hosiery is on exhibition in the east end of the English Department. It is named "Jacquin's Patented Circular Knitting Machine" and was sent from Brussels, in Belgium. By simply turning a crank it goes on knitting, by circular motion, the hose or any other article of hosiery. The thread is fed from cops or spools placed above the machine, and is put on to the needles by one grooved toothed wheel, and then the locking of the stitches is put on by another tripping wheel on a different set of needles, and the stitches as formed are taken off the needles and passed around a drum in a complete knit fabric. No machine in the Crystal Palace exhibits more ingenuity and delicacy of construction. It is worth the study of every mechanic. At the French Exhibition in 1849 it was awarded a medal, and it took a a prize medal at the "World's Fair" in London.

Stockings Knit by Old Ladies.—We noticed two pair of knit stockings lying alongside of one another in the English Gallery, which are worthy of a notice. One pair are long grey socks knit by Mrs. Rebecca Mayberry, of Casco, Me., aged 94 years. She is the widow of William Mayberry, an old revolutionary hero.

The other pair are long white ridge and fur lambs' wool stockings, knit by Mrs. Begg, of Ayr, Scotland, aged 82. She is the sister of Robert Burns, the plowman, the poet, and the sweetest songster that ever lived. They are beautifully knit, and are to be sold for charitable purposes. Some of Burns' countrymen will no doubt pay a handsome price for them.

Fair of the American Institute.

The twenty-sixth "Annual Fair" of the American Institute opened (after a postponement of four days,) at Castle Garden, on the 10th inst. It has been our custom to present elaborate reviews of the most interesting objects on exhibition at these Fairs, but we find upon a careful examination this year, that this labor will be light, as the bridge, halls and walls of Castle Garden exhibit a wasted and sickly appearance. So far this is the most inferior Fair ever held by this Institute; this certainly belies the report which a few months ago emanated from the Managers, namely, that they were to have the best Fair ever held in this city. We can find no excuse for the poverty of the display, when we reflect upon the great number of American applications for space which were rejected by the Crystal Palace Association. The city of New York never offered so many inducements to inventors and manufacturers to exhibit their productions, as it contains more strangers than ever visited it before. It really appears as if the managers trusted only to former mismanagement to fill their halls, instead of exhibiting greater energy and tact, to obliterate the great mischief which was perpetrated at the last Fair in relation to the "Rail Road Invention Prizes." They do not seem to have advertised in respectable and influential papers, nor to have sent out agents in order to induce a spirited rivalry among our mechanics and manufacturers, by soliciting them to send articles for display from their workshops and factories. Such conservatism will not answer in the present day; it is unworthy of the American name, and deserves reproof.

A Catalogue of the Exhibition we did not see. We had no use for such an article, and to save those of our readers who may visit it the expense of such an investment, we will present them with one—brief and comprehensive. As you enter upon the bridge, the first objects which fall upon the vision are a small collection of straw cutters, rakes, reapers, cider mills, hoes, horse powers, plows, etc., mainly the contribution of Allen & Mayer, of this city, who keep these articles for sale. Immediately at the left of the entrance are the Troy Bells, which have, for aught we know to the contrary, been stand- ing there since Castle Garden was first used for these Exhibitions; no doubt they are good articles, but we should like to see a change, something which indicates progress.

Beyond the "bells," and nearer to the Castle entrance, are usually to be seen a number of inventions of a nondescript character, without name, use, or utility, attended by some curious genius, whose volubility of description considerably eclipses the practical character of their inventions. This exhibition always affords much amusement to the spectators. Unfortunately there is only one this year, of this class, but it is very good indeed.

At the left of the entrance, Hoe & Co. exhibit fine specimens of saws, as usual. There are also the same collection of stoves, furnaces, grates, hardware, brushes, locks, signs, banners, etc. At the right hand we have beds, bedding, furniture, scales, carriages and tinmen's tools. In the gallery are all kinds of fancy contributions, from the Lord's Prayer on a three cent piece, to the full-grown bed quilt, done by an old lady ninety-five years of age. Children figure in patch, stitch and crotchet work, and our grandmothers emulate them in the same field, and with the same spirit of curiosity.

In the machine room, where there has usually been many things to interest us, and which, last year, was the real center of attraction, there is now almost "the silence of despair." There are a few articles and machines, however, of real merit, such as "Gardiner's Ore Separator," "Nevin's Cracker Machine," "Sharp's Horse Power," "Dickinson's Cattle Car," "Switzer's Self-holding Screw Driver," "Deitz's Hames," "Dixon's Black Lead Crucibles," "Crane's Self-aeting Chain Stoppers," (an excellent improvement for ships, it secures every link of chain as fast as it is drawn in, in weighing the anchor,) "Jones' Topographer," "Gee's Soda Water apparatus," "Otis' Mortising Machine," "Cochran's Ore Crusher," "Arnold & Felton's Boiler Feeder," "Week's Rotary Mortising Machine," (it has an endless chain cutter, and is manufactured by Cobb, Mason & Hill, Jersey City,) "Whitney's Tinsmith's Tools," and a few other articles, without novelty. The machinery displayed, is driven by a 30 horse power engine, made by Hughes & Phillips, Newark, N. J.

Other objects of interest, which may be presented during the Fair, will be noticed in future

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numbers. We have always freely criticised the proceedings of the American Institute, from the laudable motives of stirring up the members to do something worthy of note. We heartily wish that this Institute could be made an index of the genius,industry and science of our people, but it never has been. This city is the very spot to conduct such an institution, and no doubt the present one might be so managed as to be an honor and benefit to our whole country. There are some very able and spirited members and officers in it; their energies, however, appear to be tied down by a temporizing policy of "pleasing with a rattle, and tickling with a straw."

TO CORRESPONDENTS.

J. H. C., of Ky.—You would see by the last number of the Sci. Am., which was printed before your letter came, that your plan for keeping butter is not exactly new. We have no doubt but it was new to you, but we have had the receipt a long time in our possession.

G. J. M., of Ct.—We have never seen the galvanic pile employed to deposit tin on iron or copper; and the reason, we presume, is, that it does not require the expense of the battery to do so.

J. L. H., of N. Y.—Either Parker's, Reuben Rich's Vandewater's, Jagger, Treadwell & Perrys, or Caleb Rider's, are good wheels, and will answer your purpose. Of course, you must have enough water to do the extra work, you intend to give to a new wheel.

B. M. H., of ——.—Your two spike drums, will be the exactly the same as the mill now used for breaking coal. It does not require four times the power to give a double velocity in machines, where the resistance is the same at every point, as in a double machine, with one moved with half the velocity.

E. H. B., of Ill.—The paper of Lieut. Hunt was an able one, but with its conclusions we do not agree: in some parts he was, we believe, reported incorrectly.

C. W. of Pa.—We cannot recommend a better plan than Bulkley's, to season it with currents of hot air is very good and not patented.

J. B. A., of N. Y.—You will find in the Scientific American three weeks ago, a very excellent plan for preventing boilers from scaling.

M. F. N., of Md.—The Pennsylvania Polytechnic, we believe, is in operation in Philadelphia. You speak truly about youngmechanics; more of them would go to college to learn science, if languages were left out; this they now can do at Yale, and Cambridge—Lawrence School.

H. F. N., of Ohio.—Your governor is the very same as that employed on clocks for the same purposes.

D. A. W., of Vt.—We cannot give you the relative strength of the extracts you speak of, or we should do so; the pamphlet is not yet published. It does not hurt sumac to boil it for cotton; it is best it should be.

R. C. L., of Ala.—The advantage to be gained by a rotary engine is the applying rotary motion direct to a shaft; the motion has to be changed in a reciprocating one. The essential points to be aimed at are evenness of wear in all parts, and a small amount of friction surface. There are many simple rotary engines in use; success, surely, is all that is desired. We cannot answer you about Bristol's engine at present.

W. G. B., of Ga.—The best work for you is Scott's Engineers Assistant, but it costs $24, we believe.

J. L. H., of N. Y.—Perhaps you have all the power your fall can give, if not, put two wheels on one shaft, on Parker's plan.

E. S. P., of Tenn.—Your alleged improvement in horse powers contains no patentable features. We have seen the same thing before.

E. W. C., of N. J.—Thompson obtained a patent last year, for an auger for boring Artesian Wells. We know nothing of a caveat having been filed.

E. W. S., of Mass.—We are not in possession of any information respecting the patent saws of Nova Scotia, and cannot. therefore, advise with you in regard to securing patents for them.

J. R., of Ill.—Black's Work on Brewing is as good as any. It is sold by Appleton & Co., 200 Broadway.

J, V., of N. H.—We do not know where Porter's Patent Press is made.

W. D., Jr., of Pa.—Your annunciator is a new thing. If you can make it operate well, it would supersede all others in use, as they are liable to such objections as you enumerate.

J. H. K., of Pa.--Your plan of paddles is not new, excepting the angle, which is wrong. It would not do to lift the stern, for that would make the bow dive into the water; the very thing that should be avoided.

W. O. G., of Conn.—We have never known of a ditching machine constructed as described in your letter of the 10th inst. You had better try it.

J. S. L., of N. Y.—We know nothing of Stodard's machine. Wood's patent, sold by J. D. Johnson, Bridgeport, Conn., is a good machine.

J. E., of Mass.—If your pegging machine interferes with Gallahue's, you cannot use it; if it is different from his and all others, a patent can be secured for it.

D. B., of Mass.—You had better forward us a model of your corn husking machine. We should think it new judging from the meagre description given in your letter.

W. G. McA., of Tenn.--We have very carefully examined the sketch of your machine for splitting bars of wrought iron. It could not be patented, as it contains the same features as are found in shears for cutting iron in common use.

Money received on account of Patent Office business for the week ending Saturday, Oct. 15:—

E. M., of N. J.; $30; D. A. H., of N. Y., $60; J. N. P., of Mass., $45: T. W. K., of N. Y., $30; L. and M. T., of Wis., $20; S. B. C., of Mass., $30; K. and F., of Mass., $30; A. C. G., of N. Y., $30; J. P. M., of N. Y., $60; J. D., of Pa., $30; J. B. L., of O. $35; G. W. B., of N. Y., $55; S. H., of N. Y., $55; J. W., of C. W., $30; S. W., of L. I., $65; C. G., of S. C., $54,77; R. R. of N. Y., $57; N. R., of Ill., $20; W. E. O., of N. Y., $25.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, Oct. 15:—

D. A. H., of N. Y., (2 cases); E. M., of N. J.; W. E. O., of N. Y.; J. W. P., of N. Y.; S. W., of L. I.

A Chapter of Suggestions, &c.

MISSING NUMBERS—Mail Subscribers who have failed to receive some of the numbers of Vol. 8, are informed that we are able to supply them with any of the numbers, from 1 to 52, EXCEPT the following, and these we are ENTIRELY out of—Nos. 2, 4, 10, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 25, 26, 47, 48, 49, 50.

TO CORRESPONDENTS.—Condense your ideas into as brief space as possible, and write them out legibly, always remembering to add your name to the communication; anonymous letters receive no attention at this office. If you have questions to ask, do it in as few words as possible, and if you have some invention to describe, come right to the business at the commencement of your letter, and not fill up the best part of your sheet in making apologies for having the presumption to address us. We are always willing to impart information if we have the kind solicited.

PATENT LAWS, AND GUIDE TO INVENTORS—We publish and have for sale, the Patent Laws of the United States—the pamphlet contains not only the laws but all information touching the rules and regulations of the Patent office. Price 12 1-2 cents per copy.

BINDING.—We would suggest to those who desire to have their volumes bound, that they had better send their numbers to this office, and have them executed in uniform style with their previous volumes. Price of binding 75 cents.

FOREIGN SUBSCRIBERS—Our Canada and Nova Scotia patrons are solicited to compete with our citizens for the valuable prizes offered on the present volume. [It is important that all who reside out of the States should remember to send 25 cents additional to the published rates for each yearly subscriber—that amount we are obliged to pre-pay on postage.]

RECEIPTS—When money is paid at the office for subscriptions, a receipt for it will always be given, but when subscribers remit their money by mail, they may consider the arrival of the first paper a bonafide acknowledgment of the receipt of their funds.

BACK NUMBERS AND VOLUMES—In reply to many interrogatories as to what back numbers and volumes of the Scientific American can be furnished, we make the following statement: Of Vols. 1, 2, 3, and 4—none. Of Vol. 5, all but six numbers, price, in sheets, $1; bound, $1,75. Of Vol. 6, all; price in sheets, $2; bound, $2,75. Of Vol. 7, all; price, in sheets, $2; bound, $2,75. Of Vol. 8, all; price, in sheets, $2; bound, $2,75.

PATENTEES—Remember we are always willing to execute and publish engravings of your inventions, providing they are on interesting subjects, and have never appeared in any other publication. No engravings are inserted in our columns that have appeared in any other journal in this country, and we must be permitted to have the engravings executed to suit our own columns in size and style. Barely the expense of the engraving is charged by us, and the wood-cuts may be claimed by the inventor, and subsequently used to advantage in other journals.

GIVE INTELLIGIBLE DIRECTIONS—We often receive letters with money enclosed, requesting the paper sent for the amount of the enclosure, but no name of State given and often with the name of the post-office also omitted Persons should be careful to write their names plainly when they address publishers, and to name the post. office at which they wish to receive their paper, and the State in which the post-office is located.

PATENT CLAIMS—Persons desiring the claim of any invention which has been patented within fourteen years, can obtain a copy by addressing a letter to this office, stating the name of the patentee, and enclosing $1 for fees for copying.

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American and Foreign Patent Agency.

IMPORTANT TO INVENTORS.—The undersigned having for several years been extensively engaged in procuring Letters Patent for new mechanical and chemical inventions, offer their services to inventors upon the most reasonable terms. All business entrusted to their charge is strictly confidential. Private consultations are held with inventors at their office from 9 A. M., until 4 P. M. Inventors, however, need not incur the expense of attending in person, as the preliminaries can all be arranged by letter. Models can be sent with safety by express, or any other convenient medium. They should not be over 1 foot square in size, if possible.

Having Agents located in the chief cities of Europe, our facilities for obtaining Foreign Patents are unequalled. This branch of our business receives the especial attention of one of the members of the firm, who is prepared to advise with inventors and manufacturers at all times, relating to Foreign Patents.

MUNN & CO., Scientific American Office,
128 Fulton street, New York.

EUROPEAN PATENTS.—MESSRS. MUNN & CO. pay especial attention to the procuring of Patents in foreign countries, and are prepared to secure patents in all nations where Patent Laws exist. We have our own special agents in the chief European cities; this enables us to communicate directly with Patent Departments, and to save much time and expense to applicants.

WE WANT TO CONTRACT FOR TUBULAR Boilers, from 8 to 20 horse power. Address HALL & BOLLINGER, Fayetteville, N. C. 5 3*

PARSONS' SELF-STRAINING SAW—Requires only ten pounds' weight to strain it, and combines the advantages of both muley and gate or sash mills, will bear as much feed, is as easily kept in order, will cut as much lumber with one-fourth less power, and is in successful use in five States. A working model is in the Crystal Palace, where further information can be had, or of the proprietor at Wilkesbarre, Penn.. JAMES JONES. S. E. PARSONS, Agent. 6 3*

WINNOWING MACHINES—State, County, and Town Rights or sale of the Patent Winnowing Machines, illustrated in No. 2, Vol. 9, Scientific American. Address SAMUEL CANBY, Patentee, Ellicott's Mills, Md. 2 4*

BRISTOL'S ROTARY ENGINE—Reasons why it should be used as compared with the common engine:—It is much more simple in construction, and costs much less, particularly as capacity is increased: one of a hundred horse-power will not cost to exceed $1500 to $2000, requires no foundation, it only being necessary to secure the line of shaft, and block the cylinder from rolling. It will not weigh to exceed one-third as much, nor take more than one-third the room. It can be reversed at any time by a single movement of the hand without risk of injury. There are no parts liable to breakage or derangement; if the shaft gets out of line it is of no consequence. The ordinary friction is much less, and there is none of what is termed load friction, which is usually estimated at about 14 per cent. of the whole power. The steam is used upon precisely the same principle, with less loss in space. The attention of those interested in the use of steam is called to an engine now in the Crystal Palace of about 30 horse-power. Persons at a distance desiring more full information will please address me to the care of Messrs. Munn & Co. R. C. BRISTOL, Patentee. 1

AMERICAN ENGINEERS ASSISTANT.—Lately published.—The American Engineer, Draftsman and Machinist's Assistant, designed for Practical Workingmen, Apprentices, and those intended for the Engineering profession, illustrated with 200 wood cuts, and 14 large engraved Lithographic Plates, of recently constructed American Machinery and Engine Work; by Oliver Byrne. Embracing—Mathematical and Drawing Instruments, Geometrical Problems, Brackets and Pillow Blocks, Lubricators, and Electric Steam Gauge, Horse Power, Parallel motions, The Indicator, Safety Valves, High Pressure Engines, Steamship Engines and Boilers, Rotary Engine, Locomotives, Screw Propellers, Ericsson's Caloric Engine, &c., &c. The work is published in one large 4to vol., handsomely bound, and sold at the low price of $5. It will be sent to any part of the United States free of Postage, on receipt of the amount by mail. A liberal discount made to Agents and Booksellers. Address, C. A. BROWN & CO. Publishers. N. W. Cor. of 4th and Arch streets, Philadelphia.

UNITED STATES PATENT OFFICE,
Washington, Sept. 28, 1853.

ON THE PETITION of Herrick Aiken, of Franklin, New Hampshire, praying for the extension of a patent granted to him on the twenty-seventh day of Dec., 1839, for an improvement in constructing sockets for holding tools, for seven years from the expiration of said patent, which takes place on the twenty-seventh day of December, eighteen hundred and fifty-three—

It is ordered that the said petition be heard at the Patent Office on Monday, the 19th of December next, at 12 o'clock, M.; and all persons are notified to appear and show cause, if any they have, why said petition ought not be granted.

Persons opposing the extension are required to file in the Patent Office their objections, specially set forth in writing, at least twenty days before the day of hearing; all testimony filed by either party to be used at the said hearing must be taken and transmitted in accordance with the rules of the office, which will be furnished on application.

Ordered, also, that this notice be published in the Union, Intelligencer, and Evening Star, Washington, D. C.; Pennsylvania, Philadelphia, Pennsylvania; Evening Post, and Scientific American, New York; Boston Post, Boston, Massachusetts, and Patriot, Concord, New Hampshire; Enquirer, Cincinnati, Ohio, once a week for three successive weeks previous to the second Monday of January next, the day of hearing.

CHARLES MASON,
Commissioner of Patents.

P. S.—Editors of the above papers will please copy and send their bills to the Patent Office, with a paper containing this notice. 6 3

WATTS, BELCHER & CO.—Machinists, Manufacturers of Steam Engines, Lathes, Planing Machines, and Machinists' Tools of all descriptions. Jobbing promptly attended to. Passaic Works, Passaic st. Newark, N. J. WM. WATTS, ZACHARIAH BELCHER, & GEO. WATTS. 6 4*

TO INVENTORS—Every description of Models and Patterns made in the best manner and on reasonable terms. T. M. CRACKLES, 38 Hamilton Avenue, between President and Vanbrunt streets, Brooklyn. 1*

FARMER.—WANTED—By a young man familiar with the late improvements in Agriculture, a situation as Superintendent of a farm at a liberal salary, or a furnished farm to work at a percentage. Address A. G. F., at V. B. Palmer's Advertizing Agency, Tribune Buildings. May be seen at the Girard House until the 22nd inst., between the hours of 7 and 10 A. M., on enquiring at the office. 6 2*

TO INVENTORS—A gentleman who designs travelling through the manufacturing districts of England, to introduce an invention, would negotiate with any person having a valuable patent. for its introduction and sale there. Application may be made by letter, in the first place, directed to box 1536, Boston Post Office. 1*

MATHEMATICAL OPTICAL INSTRUMENTS.—The subscriber begs leave to bring to the notice of the professional community, his new and extensive assortment of the above Instruments, which he partly imported direct from the most celebrated makers in Europe and partly had manufactured under his own personal supervision. The undersigned would particularly invite attention to his very large and complete assortment of the justly celebrated Swiss Mathematical Drawing Instruments, for the sale of which in this country he has the sole Agency, and which he can furnish at from $5 to $200 per case. Orders from any part of the Union promptly executed, and price list sent if required.

3 6eow C. T. AMSLER, 224 Chestnut st., Philadelphia.

MACHINERY.—S. C. HILLS, No. 12 Platt-st., N. Y. dealer in Steam Engines, Boilers, Iron Planers, Lathes, Universal Chucks, Drills; Kase's, Von Schmidt's and other Pumps; Johnson's Shingle Machines; Woodworth's, Daniel's, and Law's Planing Machines; Dick's Presses, Punches, and Shears; Morticing and Tennoning Machines; Belting; Machinery Oil, Beal's Patent Cob and Corn Mills; Burr Mill and Grindstones; Lead and Iron Pipe, &c. Letters, to be noticed, must be post-paid. 1tf eow

MECANICAL DRAWINGS—J. H. BAILEY. Mechanical or Architectural Drawings executed in all kinds of perspective. Office Tryon Row, No. 5, opposite the City Hall. 5 4*

STEAM ENGINES FOR SALE.—Two new and three second-hand high-pressure, with boilers complete.—Also new Gear Lathes, and other machinery. Inquire at J. Burns' Engineers and Contractors Office, 192 Broadway corner of John street. New York. 6 2*

COCHRAN'S QUARTZ CRUSHER—These machines having proved by practical operation at various gold mines their superiority over all others, for pulverising Quartz Rock, are recommended with confidence to parties in want of such machinery. A machine can be seen in daily operation in this city, on application to JOHN S. BUSSING & CO.,
4 8t 32 Cliff street, N. Y.

EUREKA GOLD SEPARATOR—This machine has been thoroughly tested by scientific and practical gold miners, and pronounced far superior to any Analgamator yet known—an Alalgamator taking up but three feet square, and very trifling power, is capable of amalgamating one ton per hour, with great ease and perfection, without any loss of quicksilver whatever. They are portable, and delivered in boxes ready for shipment. Price $300 each. Further information can be obtained on application to JOHN S. BUSSING & CO.,
4 8t 32 Cliff street, N. Y.

NEWELL'S PATENT SAFETY LAMP AND Lamp Feeder—A new article warranted to prevent all accidents from the use of Burning Fluid, Camphene and other explosive compounds, used for the production of light. For sale, wholesale and retail, by NEWELL, CALDWELL, & COFFIN, 28 Broomfield street, Boston, and by G. W. McCREADY,
4 5t* 426 Broadway, N. Y.

THE NEW HAVEN MANUFACTURING CO.—New Haven, Conn., having purchased the entire right of E. Harrison's Flour and Grain Mill, for the United States and Territories, for the term of five years, are now prepared to furnish said mills at short notice. These mills are unequalled by any other mill in use, and will grind from 20 to 30 bushels per hour of fine meal, and will run 24 hours per day, without heating, as the mills are self-cooling. They weigh from 1400 to 1500 lbs., of the best French burr stone, 30 inches in diameter; snugly packed in a box. Price of mill $200, packing $5. Terms [redacted]. Particulars can be had by addressing as above, or to S. C. HILLS, agent N. H. M. Co., 12 Platt st., N. Y. 5 tf

NEW HAVEN MANUFACTURING COMPANY—Tool Builders, New Haven, Conn., (successors to Scranton & Parshley) have now on hand $25,000 worth of Machinists' Tools, consisting of power planers, to plane from 5 to 12 feet; slide lathes from 6 to 18 feet long; 3 size hand lathes, with or without shears; counter shafts to fit all sizes and kinds of universal chuck gear cutting engines; drill presses, index plates, bolt cutters, and 3 size slide rests. The Company are also manufacturing steam engines. All of the above tools are of the best quality, and are for sale at 25 per cent. less than any other tools in the market. Cuts and list of prices can be had by addressing as above, post-paid. Warehouse No. 1 Platt st., New York, S. C. HILLS, Agent N. H. Manufacturing Co. 5tf

PLANING, TONGUING, AND GROOVING—BEARDSLEE'S PATENT.—Practical operation of these Machines throughout every portion of the United States, in working all kinds of wood, has proved them to be superior to any and all others. The work they produce cannot be equalled by the hand plane. They work from 100 to 200 feet, lineal measure, per minute. One machine has planed over twenty millions of feet during the last two years, another more than twelve millions of of feet Spruce flooring in ten months.. Working models can be seen at the Crystal Palace, where further information can be obtained, or of the patentee at Albany, N. Y
1 tf GEO. W. BEARDSLEE.

1853. WOODWORTH'S PATENT PLANING, Tonguing, Grooving, Rabeting, and Moulding machine.—Ninety-nine hundredths of all the planed lumber used in our large cities and towns continues to be dressed with Woodworth's Patent Machines. Price from $150 to $800. Two machines are at the Crystal Palace. For rights in all parts of New York and Northern Pennsylvania, apply to JOHN GIBSON, Planing Mills, Albany, N. Y. 1 amtf

PATENTS OF INVENTION—ISAAC B. FUTVOYE, Patent Agent, Quebec, undertakes to procure letters patent of invention for the Province of Canada. I. B. F. will dispose of any kind of Patented Articles on Commission. 4 tf

A. B. ELY, Counsellor at Law, 52 Washington street, Boston, will give particular attention to Patent Cases. Refers to Messrs Munn & Co., Scientific American. 16tf

LEONARD'S MACHINERY DEPOT, 109, Pearl st., and 60 Beeaver, N. Y.—Leather Banding Manufactory, N. Y.—Machinist's Tools, a large assortment from the "Lowell Machine Shop," and other celebrated makers. Also, a general supply of mechanics' and manufacturers' articles, and a superior quality of oak-tanned Leather Belting. P. A. LEONARD.
1tf

LOGAN, VAIL & CO., No. 9 Gold st., New York.—Agency for Geo. Vail & Co., Speedwell Iron Works, Morristown, N. J., furnish and keep on hand Portable Steam Engines of various sizes. Saw and Grist Mill Irons, Hotchkiss's Water Wheels, Iron Water Wheels of any size, Portable Saw Mills, complete; Bogardus's celebrated Planetary Horse Powers; heaving forgings and castings for steamboats and rolling mills, Ratchet Drills of superior quality for machinists, Saw Gummers, Hand Drills, Tyre Benders, and shafting and machinery generally.
39 1y

NORCROSS ROTARY PLANING MACHINE,—Decided by the Circuit Court not to infringe the Woodworth Machine—I now offer my Planing Machines at a low price; they are not surpassed by any machines as to amount or quality of work. Tongueing and grooving machines also for sale, doing one or both edges as desired; 80 machines now in operation. Address me at Lowell, Mass., N. G. NORCROSS.
40 20*

MCCALLISTER & BROTHER.—Opticians and dealers in mathematical instruments, 48 Chesnut st., Philadelphia, Pa. Mathematical instruments separate and in cases, Protractors, Spacing Dividers, Drawing Pens, Ivory Scales, Tape Measures, Salometers, Spy Glasses, Microscopes, Hydrometers, &c., &c. An illustrated and priced catalogue will be sent by mail free of charge. 40 6m*

VALUABLE WATER POWER FOR SALE—Situated in Stockport, Columbia Co., N.Y., 1 1-4 miles from a depot on the Hudson River Railroad, on a never-failing stream, now estimated to be of the capacity to run 600 power looms with all necessary machinery, and may be increased; dam built of stone, 19 feet fall. The improvements on one side consists in part of a building of stone and brick 118x47; over-shot wheel, nearly new, 14 feet diameter, 12 feet bucket; on the other, one of stone and wood 60x34, good over-shot wheel 14 feet diam. 7 feet bucket; with about 30 dwellings. Terms accommodating; title indisputable. Possession given immediately. For particulars inquire of R. B. MONELL, of Hudson, N. Y., or H. S. VAN DeCARR on the premises. 3 6*

PALMER'S PATENT LEG.—Manufactured by Palmer & Co., at No. 5 Burt's Block, Springfield, Mass., for New England and New York States, and 376 Chesnut street, Philadelphia; in every instance of competition in the Fairs of the various Institutes of this country, it has received the highest awards as "the best" in mechanism, usefulness, and economy. At the "World's Fair," London, 1851, in competition with thirty other varieties of artificial legs, (by the best artists in London and Paris,) it received the Prize Medal as the best. 48 10*

NORRIS WORKS, Norristown, Pa. The subscribers build and send to any part of the United States, Pumping, Hoisting, Stamping, and Portable Engines, and Mining Machinery of every description.
41 1y. THOMAS, CORSON & WEST.

PIG IRON—The subscriber has always on hand a stock of the best brands of American and Scotch Pig Iron, for sale at the lowest market price. G. O. ROBERTSON, 135 Water st, cor. Pine, N. Y. 1 8*

AARON KILBORN, No. 4, Howard street, New Haven, Ct., manufacturer of Steam Engines, Boilers, &c. Noiseless Fan Blower, a superior article, for smith's work, steam engines, brass and iron founders, and machinery in general. 51 10*

IRON FOUNDERS' MATERIALS. viz: Pulverized Sea Coal, Black Lead, Soapstone, Anthracite and Charcoal Facings. Also, best imported Fire Bricks, Fire Clay, Fire Sand, and Moulding Sand, for sale by
G. O. ROBERTSON,
1 8t* 135 Water street, corner of Pine.

ALDEN'S PATENT FAN BLOWER—Gives a stronger blast, with less power than any other.
2 6* J. B. CHICHESTER, Agent, 585 Broadway, N. Y.

C. B. HUTCHINSON'S PATENT STAVE Cutting Machines—The best in use, and applicable alike to thick and thin staves, for barrels, hogsheads, &c.; also his Head Cutting and Turning, and Stave Jointing and Crozing Machines. This machinery reduces the expense of manufacturing at least fifty per cent. For machines or territorial rights, apply to C. B. HUTCHINSON & CO., Syracuse, N. Y. 2tf

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Scientific Museum.

To Coat Iron with Copper or Brass.

Clean the iron to be coated in a bath of weak sulphuric acid, to which is added a small quantity of yeast. Be sure and take all the scale off the iron, so as to leave it perfectly bright; wash the iron in warm water to remove the sulphuric acid, and then immerse it in a bath of muriate of zinc, with a small quantity of muriate of tin added, and it is further improved by the addition of a little muriate of ammonia. The articles are taken out of this bath, and dried on a hot iron plate, and while hot immersed or drawn through the melted metal.

The copper, brass, German silver, or other metal alloys are melted in a wrought-iron or malleable iron pan, into which is introduced in the state of a powder a sufficient quantity to answer as a flux, of borax and fluoride of soda, or the molten metal may be poured from the iron pan in which it is melted, into another iron pan containing these ingredients, and the fire kept up under it. The flux prevents volatilization. The iron to be coated is then introduced into the molten metal which becomes liquid at a lower temperature than iron, and kept agitated until it is sufficiently coated. After the iron article, or articles are thus coated, they are taken out, and when nearly cold, to clean and improve their color, they are quenched in dilute sulphuric or muriatic acid. By this process, iron nails represent copper, brass, and German silver, and other parts of coffin furniture; iron, spoon blanks, wire, and sheet-iron, and various articles in cabinet furniture have thus been coated. Spoons, wire and sheet iron may thus be coated. The spoons which are thus coated with German silver may afterwards be planished and polished. Wire thus coated may be drawn into any required thinness, and retain its coating, although several times annealed and pickled. It is therefore a valuable process for those who make thick iron wire for lightning conductors, &c. Iron wire thus coated, drawn through one hole to level its surface and tipped, makes excellent stair rods—the eyes of which are coated in the same way, and pickled, dipped, and lacquered.

The Sheffield makers of stair rods know this, hence the great number of such rods sold here for real brass with brazen effrontery. File through any round brass stair rod, and very likely it will be found to have an iron heart covered with a thin brazen coat; this we suppose is unknown to the majority of our good housewives. Sheet iron treated by this process may be rolled very thin, having the appearance of the genuine metal of which it is coated. The articles in cabinet furniture may be pickled, burnished, and lacquered, to suit the class of articles, so as to deceive the sharpest eyes in relation to their composition. The above, we have no doubt, will prove valuable to many of our readers.

Cleaning Stained Cotton.

Joseph P. Black, of Abbeville, S. C., writes to the "Independent Press" of that place, and describes as follows his mode of cleaning cotton soiled by rains:—

"Take a common wheat thrasher, and raise the cylinder one inch, the box one-half inch, which will throw the frails an inch from the cross bar, and by placing the cross bars an inch apart, the dirt and trash pass through and fall in a heap near the thrasher, and separately from the cotton. In this way I cleansed enough dirty cotton to make some three bales of ginned cotton in about two hours. It can be cleaned as fast as several hands can feed the thrasher, and when done, is as white as that which has opened since the rain."

Preserving Butter.

The farmers of Aberdeen, Scotland, are said to practice the following method for curing their butter, which gives it a great superiority over that of their neighbors:—

"Take two quarts of the best common salt, one ounce of sugar, and one ounce of common saltpetre; take one ounce of this composition for one pound of butter, work it well into the mass, and close it up for use. The butter cured with this mixture appears of a rich and marrowy consistence and fine color, and never acquires a brittle hardness nor tastes salty. Dr. Anderson says: 'I have eaten butter cured with the above composition that has been kept for three years, and it was as sweet as at first.'

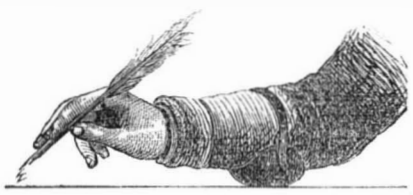
It must be noted, however, that butter thus cured requires to stand three weeks or a month before it is used. If it is sooner opened the salts are not sufficiently blended with it, and sometimes the coolness of the nitre will be perceived, which totally disappears afterwards."

Elastic Pad for Penmen.

FIG. 1.

The annexed engravings are views of an Elastic Pad to be placed on the arm for giving ease to penmen when writing. A patent was granted for the improvement on the 29th of April, 1851, to Joseph G. Goshon, of Shirleysburg, Pa., and William H. Towers, of Bucyrus, Ohio. Figure 1 is a perspective view of the pad, and figure 2 is a view of it applied to the arm of a penman. The pad is made of an elastic material, such as india rubber or an air cushion, it is of a semi-globe form, the inside, A, being concave, and the outside, B, convex; C is a small band or strip of leather, or any other suitable substance; it is permanently secured to one side of the pad, and has a number of small button holes in it. A small button is secured on a lug, E, on the other side of the pad, and the strap is represented as buttoned at D. This strap allows of a pad being adapted for arms of various thickness, also for securing it on any part of the arm, from the elbow to the wrist, as the wearer may require.

FIG. 2.



Owing to the form of the pad, A B, and the elastic nature of the material of which it is made, it is a flexible support and rest for the writer's arm, allowing it to move and turn with freedom and ease, and prevents the fingers becoming cramped and numb, from resting the arm by continuous writing upon an inflexible table or desk. One of these pads or cushions will last for a number of years, and beside being a relief to a writer, will soon save the amount paid for it in preserving the coat sleeve.

The claim is for the elastic pad or cushion to be placed on the arm below the elbow for the purposes mentioned.

More information may be obtained by letter addressed as above.

Dr. James K. Davis, who went out to Turkey seven or eight years ago, on invitation of the Sultan, to attempt the cultivation of cotton, failed in that enterprise, but brought back some Persian goats, which produce the cashmere wool and from which he is raising up a flock of goats that promise to be a valuable addition to the stock of the country.

The ice merchants in Boston ordered their agents at Mobile and New Orleans, at the breakout of the yellow fever, to deliver, gratis, ice to all who might apply for it to be used in cases of sickness.

This was a generous action indeed.

The Benefits of Olive Oil.

MESSRS. EDITORS—I am often asked "What is the benefit of your scientific paper?" I have been a constant reader of the "Scientific American" for five years, and have not allowed a single number to escape without perusing its contents; for myself I can say that I derived considerable personal benefit from it early last Spring. I was attacked with a pain in my stomach, a little on my right side, which so affected me that I was scarcely able to walk about. I employed the best medical aid, so considered, to be found in this vicinity, but all to no purpose. At last I was besought to allow a young physician to try his skill, and about the same time I noticed in Nos. 37 and 38, Vol. 8, "Scientific American," articles on the subject of Olive Oil, and its good effects upon the human system, but did not mention it to the physician, who yet had not prescribed anything for me. In a few days after this I requested him to do something for my relief, if he could: he ordered me to take half a pint of olive oil, and two tea-spoonsful of the essence of anise, mixed together, and to drink this at stated times. Considering well upon what I had read in your valuable paper, I fell in with his prescriptions; a week from that time he ordered a second dose of the same. Since using it I have not experience the slightest pain, unless I exercised too severely, which sometimes produced a little but only momentary pain. Some physicians told me I had the liver complaint, others consumption, but the young physician spoken of did not agree with any of them, and judging from what he said, and the effects of the oil,—he was right. Now, I would ask, could there be a more simple and safe remedy than olive oil? The doctor says he finds it a very useful article in his profession, and that the public are not aware of its good healing properties. E. W. D.

Norwich, Ct.

(For the Scientific American.)

The New Steamboat Law.

Allow me, through the columns of your valiant-for-truth paper, to make a few remarks on the workings of the New Steamboat Law, now in force. The good effects of this law are seen and felt by every sensible well-thinking man; the public have been fully satisfied with it, so far as it has gone. The loss of life is very small for the past six months, compared with the same months in other years; this effect must be produced by some cause. It has been said by some steamboat owners this law is a humbug, and they mean to use their money and efforts, at the next Congress, to have it repealed. I have no doubt they will, as some of them have not yet complied with its provisions. I hope every Member of Congress will take the trouble to post himself up in regard to the good effects of this law, before he votes on the question of repealing it. The Engineers, of whom I am one, have been knocking at the door of Congress for several years for the enactment of such a law. The beneficial effects of this one is traceable to several causes; the first is the prohibition of drinking men to manage steamboats; another important thing is, it is every man's interest to carry out the law, as he has taken oath to do so, and if he fails so to do, his license is revoked, and then he cannot get employment any where on the Mississippi or Ohio rivers. This is a very important feature, for an engineer holds his situation only by doing his duty. This feature is carried to a wonderful extent in England,—every police officer and fireman holds his office only during good behavior. There is a great difference between a man holding his office for one or more years by election, and one holding it as long as he fulfills his duty. Another effect of the New Steamboat Law is the adoption of better means of avoiding danger, in the way of life-boats and life-preservers, steam and water gauges, and the fusible alloy in the boilers: this latter is a valuable acquisition when properly applied; but, unfortunately, it has been allowed by the inspectors to be applied in any way, such as having the plugs in the flues, and some on Evans' plan, which, in my opinion, is decidedly the best: it has two advantages over the plates or plugs; the pressure does not come on the alloy, the same metal answers all the time. The inspectors should settle down on some system of using the alloy, which will be certain and uniform in its operation; such an important matter should be well digested, and some uniform plan adopted. Some of the Inspectors also will pass things which others will not; and some are not capable of inspecting themselves; these things should not be.

Who is it that objects to this law? No one but the owners of boats, who have to pay for fitting the boat out in compliance with the law; the public and engineers do not object; the pilots do not, except one here and there, who likes liquor too well. I send you these facts that the public may have a chance to think for themselves before the proposition comes up to repeal this good law. AN ENGINEER.

[In our article, last week, on "The Association of Engineers," we mentioned that the views expressed at the meeting in Cincinnati accorded with "the statements contained in a letter on another page;" the above was the letter referred to; it was then set up, but owing to the very long list of patent claims, it was not published.

LITERARY NOTICES.

PRACTICAL DRAUGHTSMAN'S BOOK OF INDUSTRIAL DESIGN.—For mechanics and engineers: published by Stringer & Townsend, New York; edited by Wm. Johnson, C. E. Part 4. This work is a translation from the French of Armengaud, the Elder and Younger. It is an excellent work.

THE BIBLIOTHECA SACRA—The October number of this famed religious Review, published by Wm. F. Draper & Brother, Andover, Mass., contains an article on Phrenology by E. E. Pond, D.D., which is characterised by keen logic and a profound knowledge of his subject. Another article on Prof. Edward's Life and Writings, is full of interest and learning. Another article, by Prof. Stowe, on the Prophet Jonah, contains some views that are invulnerable in respect to the veracity of the Scriptures.

ENGINEERS AND MACHINISTS' DRAWING BOOK—Part 5.—Blackie & Son, publishers, Glasgow, London and New York. This work is on the basis of M. Le Blanc and MM. Armengaud. The engravings are on wood and steel: they are excellent, and the whole work is creditable to all concerned. It is indeed somewhat singular that the French draughtsmen should teach the English machine draughting, but so it is.

SHIP BUILDER'S MANUAL—This excellent work, published by Adriance, Sherman & Co., this city, and edited by John W. Griffiths, has now reached its ninth number; it will be completed in three more numbers.

MECHANICS

Manufacturers and Inventors.

The present Volume of the SCIENTIFIC AMERICAN commences under the most gratifying assurances, and appearances indicate a very marked increase to the subscription list. This we regard as a flattering testimonial of the usefulness and popularity of the publication so generously supported. We are greatly indebted to our readers for much valuable matter, which has found a permanent record on its pages. The aid thus contributed has been most important to our success, and we are grateful for it.

From our foreign and home exchanges—from the workshops, fields, and laboratories of our own country, we have supplied a volume of more than four hundred pages of useful information, touching every branch of art, science, and invention, besides hundreds of engravings executed by artists exclusively in our employ.

The present Volume will be greatly improved in the style and quantity of the Engravings, and in the character of the matter, original and selected. Having every facility for obtaining information from all parts of Europe, we shall lay before our readers, in advance of our cotemporaries, a full account of the most prominent novelties brought forward.

The opening of the Crystal Palace in this city, forms an interesting subject for attraction. We shall study it faithfully for the benefit of our readers, and illustrate such inventions as may be deemed interesting and worthy.

The Scientific American is the Repertory of Patent Inventions: a volume, each complete in itself, forms an Encyclopedia of the useful and entertaining. The Patent Claims alone are worth ten times the subscription price to every inventor.

PRIZES!! PRIZES!!

The following Splendid Prizes will be given for the largest list of mail subscribers sent in by the first of January next:

$100 for the largest list.		$30 for the 7th largest list.	
$75 for the 2d largest list.		$25 for the 8th	ditto
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